

MANUFACTURERS' RECORD

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Southern Industrial and Hardware

Newspaper.

VOL. XI. NO. 24.
WEEKLY.

BALTIMORE, JULY 23, 1887.

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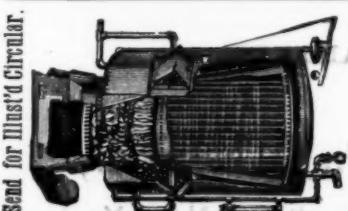
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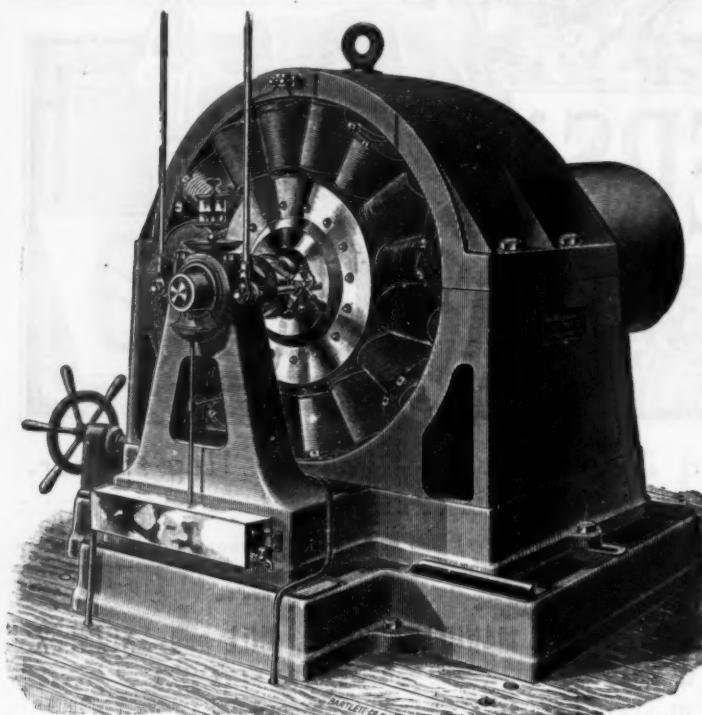
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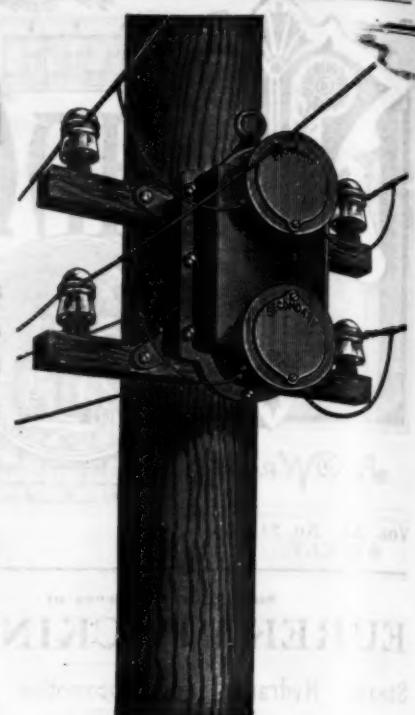
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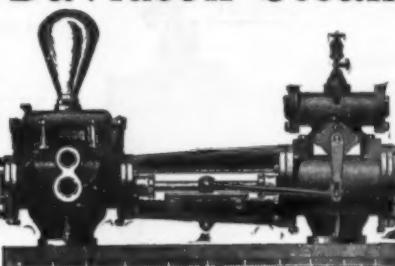
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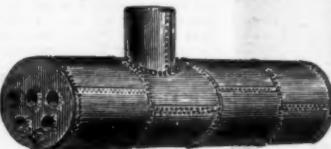
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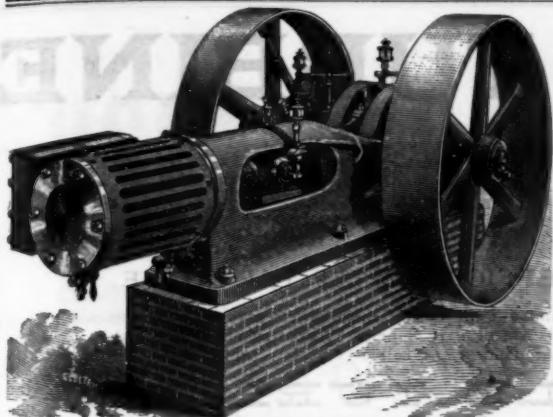
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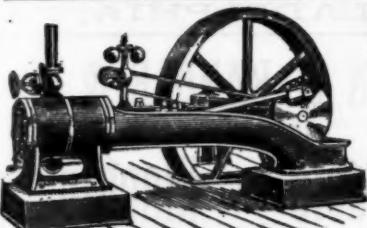
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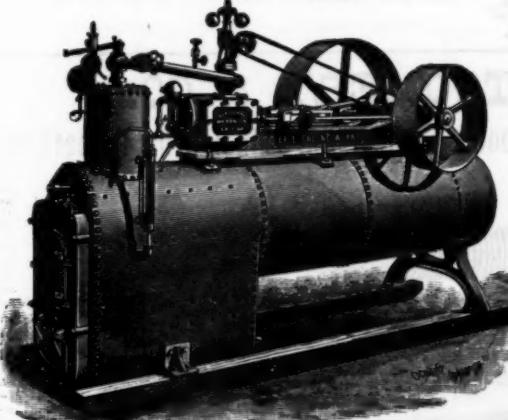


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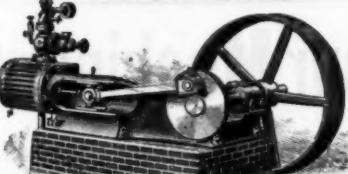
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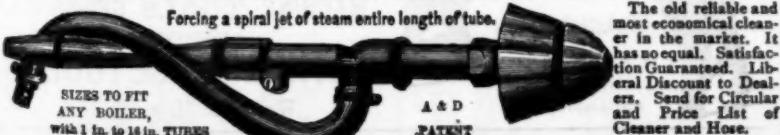
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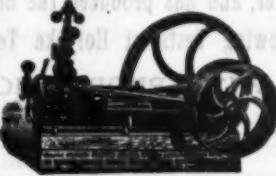
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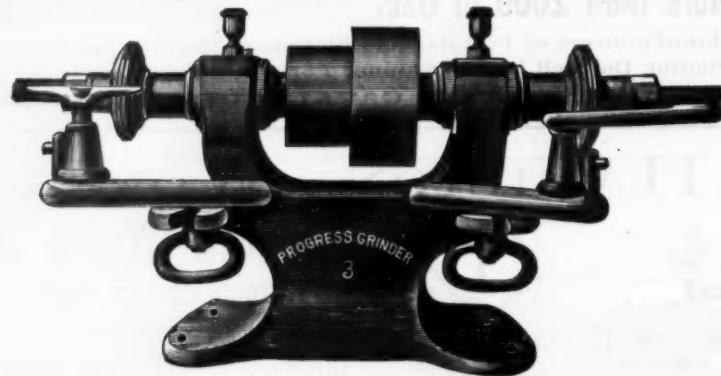
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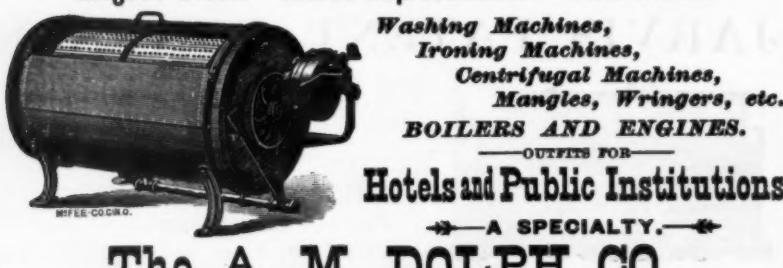
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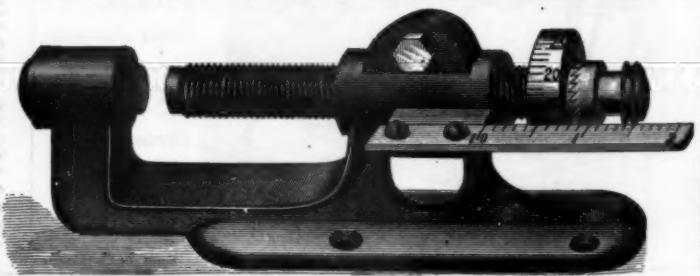
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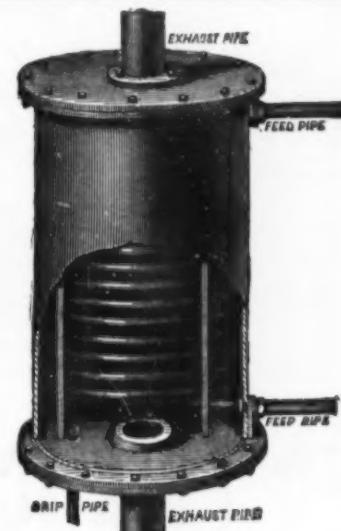
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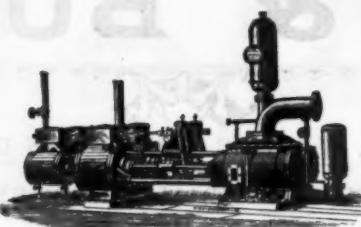
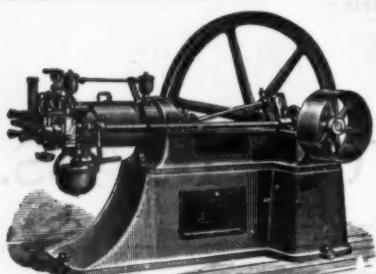
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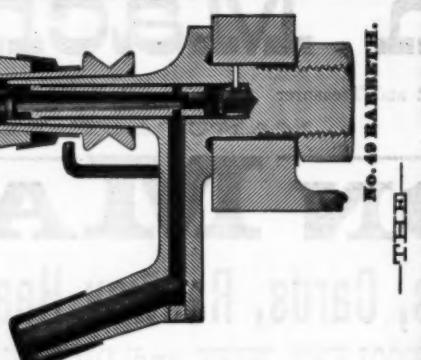
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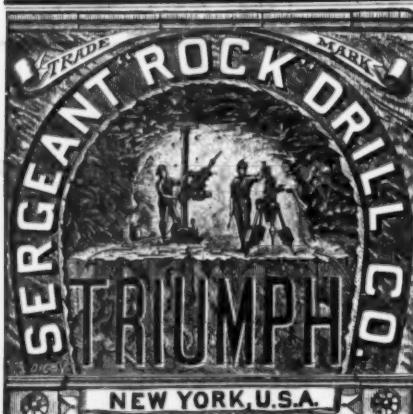


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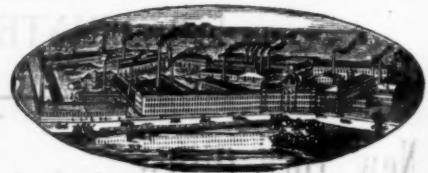
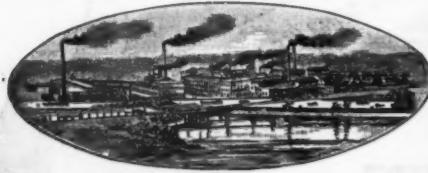
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BALTIMORE. JULY 23, 1887.

Judge Kelley's Letter.

To this issue of the MANUFACTURERS' RECORD the Hon. Wm. D. Kelley contributes another of his series of letters on the South. In this letter Judge Kelley discusses the relation of the Southern and the Northern iron interests, and shows what great progress has been made in the former section. He calls attention, however, and very wisely, too, to the fact that even at the present rate of increase in iron making, it will be many years before the South produces its proportion of the total output of the country. Thus, the South, instead of making too much iron, has yet an immense field to cover before it produces as much as it consumes. The importance of building more diversified enterprises and turning its pig iron into finished goods, is strongly urged and we trust that this will be heeded. It is true that there is a rapid growth in this line, but just so long as Southern pig iron finds a market North, and the South continues to purchase its machinery, its agricultural implements, hardware, &c., in that section, just so long will this advice be needed. In setting forth the facts as to the South's resources and its development, as he is doing in these letters, Judge Kelley is accomplishing an immense amount of good for that section. His statements carry conviction to people of all sections and of all classes. Writing of these letters to the editor of this paper a well-known Northern gentleman says:

"It is amazing that a man of Judge Kelley's years (he is now 73 years old) should, in this intensely hot weather, devote so much time to the preparation of the important series of letters which he is contributing to your paper."

THE South Florida Railroad Co. has shown commendable enterprise in having 70,000 copies of a very fine pamphlet, setting forth the attractions of the country along its line, printed for free distribution. This company employed the well-known poet and prose writer, Will Wallace Harney, to prepare the pamphlet, and then they had it printed in the best manner. They have wisely gotten this out in advance of the season to prevent the unavoidable mistakes and delays that occur when the attempt is made to rush such things through on short notice.

The Western Way—An Example for the South.

Southern cities and towns are seeking to attract the attention of capitalists and manufacturers of other sections to their great advantages. The North and Northwest are crowded with people who could readily be induced to move South, and the question is how to reach them? An answer to this may be found by studying what a few remarkably successful Western towns have done.

Wichita, Kansas, is noted far and wide for its wonderful progress, surpassing in some respects the marvelous growth of Birmingham. The secret of this progress is told by a Wichita business man in the following words:

"We organized. We held almost nightly meetings, and among the first thing we agreed upon was to hang together and stay by each other through thick and thin.

We advertised by hundreds of thousands of circulars. We set forth all our advantages in such a manner that strangers who were led by our circulars to give us a call were not deceived, but, on the contrary, agreed that we had not put it as strong as we might.

Every town in the East of notoriety was not only served with our circulars, but our newspapers.

And the newspaper advertising did double duty. Our people made it a rule to ask all their friends to advertise.

We then subscribed for a large number of copies, loaded with local advertising and great advantages, and we found by conversing with parties who finally came here prospecting that the full advertising columns of our papers which they had seen did more than all else to impress them with the growth and importance of the place.

We found then we could not overdo this thing—that the more we paid out for these purposes the more were our profits. Every new comer was a customer to most of our stores, and while their advertising paid to them rich returns, it served the double purpose to impress the Eastern man who had an eye to business with the fact that Wichita was a rising town, and thus we have gone on until we have added population since I came here of over 20,000, and property has increased in business places more than a thousand-fold, and in the country round about us the appreciation has been over 400 per cent.

I know as well as you can know that printer's ink is the best capital to boom a town. Had we not used it unsparingly Wichita would not have been larger than Carthage. As it is we will soon outrank any town in the State."

That is certainly a most excellent statement of the case. But it took money to do all this. Hundreds of thousands of circulars, special editions of local papers, &c., could not be sent out without costing some money. Did it pay? Well, the growth of Wichita in a year or two from comparatively nothing to a great trade and railroad center, the increase of over a thousand per cent. in the value of real estate, and an increase of over 20,000 in population in a short time is the answer. Only a few weeks ago we were told by a gentleman just from Wichita, that while there he saw a lot 24 feet front and of moderate depth sell for \$51,000 or over \$2,000 a front foot. These people were united. They worked to-

gether; they held their meetings almost every night and they flooded the country with literature as to Wichita and its advantages. It is stated that they would raise money almost upon a moment's notice for any good enterprise, whether it be to build a factory, a church, a school, a Young Men's Christian Association Hall, or anything else that would advance the town's prosperity. They had snap and push and they realized that to succeed they must put forth the most persistent united efforts.

Findlay, Ohio, is another town that is said to be the best advertised place in America. In one day recently the corner-stones of about one dozen great iron, glass and kindred enterprises were laid. What made Findlay known and thus brought this great prosperity. A correspondent tells the story. He says:

"The town has a Chamber of Commerce building, which is nicely furnished, and in which the enterprising citizens meet to discuss all matters relating to the pushing of the town. The secretary of the board, one of the pleasantest of fellows, is what might be called a professional town boomer. He is paid a salary of \$5,000 a year by the chamber to take general charge of the interests of the town. He sees that strangers see all of its advantages, introduces them to the citizens, gives information to manufacturers and devotes his whole time to schemes in the interest of the place. He can tell you everything you want to know, and it is surprising how every objection you advance is met with a good reason for being considered just the contrary. This man in Findlay's instance is an able and efficient worker. He has traveled all over the world, and I imagine from his talk with me he has been engaged in booming other towns before the Findlay gas was discovered. He is full of personal magnetism and is well educated. He attends well to the newspaper correspondents, and rival towns charge that some of the news published in the various newspapers about Findlay was paid for in hard cash by this Chamber of Commerce. I doubt not that the fact that I was referred to in the Findlay papers as 'a distinguished writer who had come to look at Findlay' was dictated by him, and it was due him largely that the great celebration of several weeks ago was so much of a success. To show the enterprise of Findlay, the town council voted \$13,000 to pay the expenses of this celebration and an additional \$7,000 was subscribed by the citizens. The citizens of Findlay seem satisfied with their venture, and say that the advertising they got was worth at least \$200,000."

It is needless to say that it pays Findlay's business men to spend money thus freely, for it is returned to them many fold.

Of another town the Chicago Inter-Ocean says:

"They have snappy people in the live Western cities. They make money and give it freely. Here, for instance, is St. Joseph, which raised \$240,000 for the Rock Island in thirty days; \$60,000 for the Young Men's Christian Association in two hours; \$5,000 for the Home of the Friendless in thirty days; \$5,000 for the base ball club in two days, \$30,000 for the Santa Fe in fifteen days; \$5,000 for advertising St. Joseph in ten days. If some of the great cities East would take a note of this they would not daily come before the world begging for dollar contributions for monuments and works of benevolence. In the West when they want a thing they ask for it, and men put their hands in their pockets and foot the bills."

We have given these illustrations of how a few Western towns have

been able to surprise the world by their growth that our Southern friends may follow their example.

The Advertiser, of Montgomery, Ala., in calling attention to the necessity of making known the advantages of that town, says:

"Montgomery has sufficiently realized that simply to sit down and wait for her natural and acquired advantages and resources to bring her great industries, will result in nothing being done. The facts of her progress detailed elsewhere sufficiently prove that.

But we deem this not a bad time to say a word on one point in which Montgomery is behind. She does not advertise herself. Attention of the outside world is directed now more especially to North Alabama, and hundreds and even thousands of people come to Alabama without having it impressed on them that there is such a place as Montgomery. This ought not to be. Montgomery needs to spend at least \$10,000 in advertising. See to it that something about Montgomery stares the public in the face from every paper, every hotel table, every car seat, every blank wall, and that every mail that leaves the city shall be loaded with special Montgomery literature.

Be lively. Send out a man to stick up maps and posters. Scatter newspapers with special articles and special pamphlets throughout the whole country. It will pay."

It will indeed pay—it will pay not simply Montgomery, but every town that will follow this advice—provided the actual advantages of the place are such as to satisfy the visitors who are drawn there by the means suggested.

It is not often that 8 railroads are at the same time under construction to any one place, however important it may be. And yet our correspondent, writing from Estillville, Va., points out the fact that 8 roads are now either actually being built, or soon will be, all to meet at a place where a town has not yet been laid off even. Big Stone Gap is the name of this remarkable place. It is a great gap in the range of mountains dividing Southwest Virginia and Eastern Kentucky, and of necessity the railroads building in that direction must cross the mountains at this place. It is one of nature's marvels. Just by the side of the river which has broken its way through this great mountain range, there is said to be a most beautiful site of 1,200 acres for a town. Here it is proposed to build an industrial town, and with the unlimited supplies of fine ore and the Elkhorn coking coal and limestone in abundance, this place ought to grow very rapidly under judicious management.

THE Iron Age estimates the production of pig iron for the first half of 1887 as compared with last year as follows:

	First half	Second half	First half
Anthracite.....	1,806.	1,886.	1,887.
Coke.....	903,354	971,885	1,066,112
Charcoal.....	1,558,536	1,839,833	1,779,594
Total.....	2,457,697	2,849,684	2,951,501
	<i>Total.....</i>	<i>3,637,587</i>	<i>3,945,743</i>
			3,067,666

Thus there was an increase during the first half of 1887 of 430,000 tons.

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The South's Position as an Iron Producer.

In the letter of Judge Kelley published in this issue, statistics are given of the production of iron in the South as compared with the rest of the country on the basis of aggregate output in each section. It may be well to supplement these figures with some facts as to the rate of increase South and North. In 1880 the United States produced 4,295,414 tons of pig iron, of which the South made 397,301 tons; in 1886 the production for the whole country was 6,366,688 tons, of which the South made 876,539 tons. Thus the increase in the whole country was 2,071,000 tons, and the increase in the South 479,000 tons. Looking at these figures in this way the gain in the South appears comparatively small. But the best way to compare the relative growth of any two sections is not by a comparison of the aggregate figures, but by the relative position as shown by the percentage of increase or decrease. On this line of comparison we have the following:

	1880 tons.	1886 tons.	Percentage of increase.
In whole country	3,898,113	5,490,747	45.4
excepting South	397,301	876,539	120.6

Thus, while the production of iron in the South during this period increased 120.6 per cent., the increase in the rest of the country was only 45.4 per cent. In 1880 the South made only 9.2 per cent. of all the iron produced in the country, while in 1886 the South's proportion was 13.7.

The year 1886 was what might be termed a "boom year" in the iron trade, and the great demand and consequent advance in prices caused many Northern furnaces that had long been idle to blow in. Many of these furnaces cannot be run at a profit except during periods of good prices, and hence we find that between 1880 and 1885, which included several years of severe depression, the North made no advance in pig iron production, while in the South there was a large increase. The relative advantages of the two sections for iron making are shown, not during periods of high prices, when there is a wide margin of profit, but during times of depression. It is then that the test comes as to which section can make iron to the best advantage. On this basis, let us see how the matter stands. In 1880 the production of pig iron in the United States was 4,295,414 tons; in 1885 the total output was 4,529,869 tons, an increase of 234,455 tons. Was this increase in the North or in the South? The following statistics show:

	1880 tons.	1885 tons.	tons.
In whole country	3,898,113	5,490,747	244,783
excepting South	397,301	876,539	479,238

These figures tell the tale. Between 1880 and 1885, owing to dullness and low prices in the iron trade, the production of iron in the North and West fell off 244,783 tons, while during the same time Southern furnaces increased their output 479,238 tons. In 1880 the South made only about

one-tenth as much iron as the North and West, while in 1885 it made nearly one-fourth as much. Comment is hardly necessary.

This increase in iron production at the South was made during a period of severe depression and in the face of a decrease in the rest of the country. Moreover it was made in spite of the fact that a very large proportion of Southern iron had to be shipped North and West, paying several dollars a ton freight. The South is now engaged in building foundries, machine works, pipe works and kindred enterprises to consume at home the products of her furnaces. It is true that for some years she will continue to ship considerable quantities of pig iron, but the development of diversified industries is progressing rapidly, and, as fast as she can well do so, she is preparing to make her own agricultural implements, stoves, hardware, &c. The importance of this cannot, however, be too often impressed upon Southern people, and we are glad that Judge Kelley so strongly urges this in his admirable letter. Let the South diversify her industries, make her own tools and machinery, her own furniture, and all other household, farm and factory goods and then add to this by raising her own foodstuffs and she will then be the richest country on the globe.

THE Montgomery Land & Improvement Co., of Montgomery, Ala., offers to donate a site free to any small manufacturing enterprise locating there, and, in addition to that, to raise one-fourth of the required capital. With large enterprises they are prepared to make special arrangements. These are certainly liberal offers. We are glad to see that this company is making strong efforts to secure the location of small industries. It is very well to build great enterprises, requiring heavy capital, but diversity of industries is essential to the permanent prosperity of all classes. While building furnaces, machine shops, rolling mills and such enterprises, do not neglect to build up factories for making brooms, buckets, barrels, handles, hubs, and hundreds of other things, which the South now purchases from the North.

It is claimed that the building of a short railroad—the Dallas, Archer & Pacific—will open up to Dallas a source of unlimited coal supply at about one half what manufacturers are now paying. Cheap fuel is of essential importance to manufactures, and if Dallas can secure this she will undoubtedly make even more rapid progress in the future than in the past.

ONE of the most important aids to the growth of a town is a first-class hotel, and we are glad that the people of the South recognize this. Rome, Ga., has decided to build a fine hotel to cost \$125,000, which will undoubtedly do much to develop that prosperous and progressive town.

The Relation of the Iron Industry of the South to that of the Country at Large.

THE ELMs,
PHILADELPHIA, July 1, 1887.
Editor Manufacturers' Record:

This letter will owe its direct application to, and its apt illustration of, the industrial and social condition of the mineral-bearing States of the South to the labor of Mr. James M. Swank, vice-president and general manager of the American Iron and Steel Association, whose recent annual report is a more masterly grouping, analysis and summing up of complex details and vast results than I can remember to have seen in any similar paper. To his intelligent and systematic labor my readers will owe the instruction they may derive from the several tabulated statements I shall present. In the course of the preliminary remarks to this report I find the following paragraph:

"An interesting and most gratifying feature of the iron trade of 1886 was the marked advance which was made by the Southern States in the development of their resources for the manufacture of iron and steel. Many new manufacturing enterprises, based upon ample capital and judiciously located, were undertaken in that year, while other works already established were pushed to their utmost capacity, and in several instances were enlarged and otherwise improved. The production of iron in these States in 1886 was much larger than in any preceding year. It will be larger in 1887 than in 1886, as few of the new works which were undertaken in 1886 were in active operation in that year; most of them, indeed, will not be in operation until the latter part of this year or the early part of next year. Iron ore mines, coal mines, and limestone quarries are being opened, railroad connections are being made, and contributory enterprises are being established wherever new iron works have been undertaken. The growth in the South of its iron industry has also imparted a spirit of much-needed enterprise to many other branches of industry in that section which we need not particularize. Altogether the South has experienced in 1886 a new birth; even its own journals and public men now speak of it as the New South. It gives to day abundant promise of achieving in the near future those beneficent industrial results which have made the North so rich, so prosperous, and so aggressive. The North welcomes its rivalry in every line of industrial endeavor, as it well knows that the South greatly needs the prosperity which diversified industries only can bring."

This greeting from the iron industry of the North to a promising competitor will be misapprehended by many men of both sections of the country. I have heard Southern enthusiasts predict the speedy transfer to the South of the skill and capital now engaged in producing iron and steel in Pennsylvania and Ohio, and have also heard Northern pessimists query as to the time when the cheaper iron of the New South will begin to close the mines and furnaces of these great iron-producing States. Were I willing to practice upon any of my readers I could produce partial exhibits that, considered by themselves, would confirm the hopes of the enthusiast or the most dismal apprehensions of the pessimist. But I visited the South in order to ascertain and report the true condition of affairs, and therefore convey my thanks to Mr. Swank for the labor and skill by which he has enabled me to present a summary of her achievements, and an appreciable indication of the vastness of the field she must conquer before she may aspire to supremacy in the American iron trade.

The production of an adequate supply of assorted qualities of pig iron with which to supply the demands of the home market is a preliminary to equality among the producers of our vast and multiform manufactures of iron and steel. To most dwellers in the vicinity of "booming" towns, the conquering progress of the South toward this consummation will be satisfactorily established by the announce-

ment that her production of pig iron during last year was 61,788 net tons in excess of the average annual production of the entire country during the ten years, 1854 to 1863 inclusive. This is certainly a very striking fact. But it is, as we shall see, more valuable as proof of possible capacity than of comparative achievement. It was in 1854 that the Iron and Steel Association of America began to gather and preserve the statistics of the trade. Its record of the production of pig iron for the ten years referred to is as follows:

Years.	Net tons.
1854	736,218
1855	784,178
1856	853,187
1857	798,157
1858	705,094
1859	840,627
1860	919,770
1861	731,644
1862	787,662
1863	947,604

This exhibit shows an annual average production of 813,899 tons, against which the South shows 875,179 tons as her production in 1886, being an excess of nearly 62,000 tons.

The following table, which exhibits the number of tons produced by each of the Southern States during 1886, may prove interesting to many persons.

States.	Net tons,
Alabama	1886. 283,859
Tennessee	190,166
Virginia	156,250
West Virginia	98,618
Kentucky	54,844
Georgia	46,490
Maryland	30,502
Texas	3,250
North Carolina	2,200
Total	875,179

Missouri produced 74,523 net tons of iron last year; and it may avert ill-founded criticism upon her omission from this list of Southern States to note the fact that she is not a Southern, but is a Western State. She is bounded on the east by Illinois, and on the west by Kansas, neither of which has ever been grouped with other than Western States. Under the national compromise of 1821 Missouri became a slave State, but that did not change her geographical relations.

But to determine the statistical value of last year's figures, we must subject them to comparison with the contemporary production of the country. For instance, our total production of pig iron for 1886 was 6,366,328 tons, and showed an increase of nearly 700 per cent. upon the annual average of the decade that closed with 1868. Of this immense total Pennsylvania produced 51.7 per cent., or more than one-half, and Ohio 14.2 per cent., her total being 908,094 tons, or 32,915 more tons than were produced in the entire South.

Mr. Swank says: "It is expected that the production of pig iron in the South in the present year will exceed a million of net tons," and General Willard Warner, who has managed the Tecumseh Furnace since just after the close of the war, and whose temperament and tone are conservative, is quoted as authority for an estimate of a million and a half tons. Should General Warner's figures be reached, even in 1888, the South will still have to make many more such strides before she will produce enough to supply the demands for finished iron and steel which her new activities have created, or her *pro rata* measured by the extent of her territory or her population. These conclusions will be resisted by the "boomers" of "paper cities," but if the figures cannot be successfully assailed, they are inevitable.

Nor can the time when the South will produce her own supply of crude iron be predicted. The data upon which to base such a prediction has not been created. The event does not, as many believe it does, depend on the extent, quality and fortunate juxtaposition of her mineral deposits, the ability and energy of her people, or the amount of capital, experience and energy, the fame of her resources may draw to her. These are essential

elements of the problem. But when profit may cease to follow the application of capital, energy, experience and science to the development of her material elements and their conversion into finished commodities, the new found prosperity of the South will come to a speedy end.

The hope of profit inspires enterprise and impels labor. Even the curse that declares that our bread shall be earned by the sweat of our face carries with it the promise that he who labors shall not want for bread. He therefore is a slave or a fool who toils without the hope of profit. The destruction of the opportunity to realize profit from venture or industry puts an end to enterprise and paralyzes the sinewy arm of labor. The revenue policy of the government, which in industrial matters, is well-nigh omnipotent, is therefore the factor that is to determine whether the new spirit which is animating and enriching the people of the mining and manufacturing States of the South, and enabling them to compete with the most prosperous and long established of their Northern competitors, is to live and expand till it shall have quickened every Southern State and created profitable uses for all their resources and remunerative employment for all their people, or is to vanish as a bright but fleeting vision.

This is not the speculative conclusion of a mere dialectician. It is the often repeated lesson of history, which is said to be philosophy teaching by example. I have just shown by official figures that the infant iron industries of the South produced more crude iron last year than the whole country had been able to average during a decade which embraced the last nine years of our existence under "tariffs for revenue only," and the first year in which the influence of the protective tariff of 1861 was felt. During the last nine years of the dominance of Robert J. Walker's "revenue reform" policy, and of a "tariff for revenue only," the average annual production of pig iron was but 798,488 tons, and made no appreciable increase. In 1863, when the inspiring influence of the protective tariff of 1861 began to be felt, it increased to 947,604 tons; and last year, under the benign influence of a quarter of a century of continuous protective duties, the New South alone exceeded the greatest productive capacity the nation had ever exhibited under a low tariff, and the country's annual average of less than 800,000 tons prior to 1863 exceeded 6,000,000 tons in 1886.

These marvelous contrasts should be studied by the people of the mineral-bearing States of the South, to whom they appeal with special significance. But they do not constitute the only admonitory and persuasive utterances history has addressed to them on this subject. Under "tariffs for revenue only" and such "tariff revision" as was effected by Mr. Polk and his Secretary of the Treasury, Robert J. Walker, for the repetition of which so many Southern editors, orators and statesmen are laboring with persistent energy, the American people found it impossible to establish the manufacture of steel. They proved time and again, and each time at the cost of hundreds of thousands of dollars, that they could make every grade of steel known to commerce. But under a revenue tariff they were not only prevented from selling their steel at a profit, but were reduced to bankruptcy by foreign conspirators who combined to supply our market with steel below the price at which we could possibly produce it, and often at less than it cost themselves. The destruction of domestic competition was the means by which they perpetuated their monopoly of our market, and made the American people reimburse the outlay they had made during their struggle for our commercial enslavement. Thus it was that steel always cost our people more under free trade than it does

or has done under protection. A protective tariff has not only permitted, but has promoted domestic competition, and thus reduced the price demanded for steel by the foreigners who monopolized our markets, and made us pay them what profit they pleased to demand. But how is it now, after thirty years of steady protection? History answers this question with point and emphasis. From page 35 of Mr. Swank's report I obtain the figures which tell the story of the annual march of American enterprise and labor toward the conquest of the American market for steel. Here they are:

The following table gives in net tons the production in the United States of all kinds of steel from 1868 to 1886.

Years.	Net tons of 2,000 pounds.					
	Bessemer steel ingots.	Open hearth steel ingots.	Crucible steel ingots.	All other steel.	Total.	
1868....	8,500	.....	21,500	.....	30,000	
1869....	12,000	1,000	23,000	.....	32,000	
1870....	42,000	1,500	35,000	.....	78,500	
1871....	45,000	2,000	37,000	.....	94,000	
1872....	120,106	8,000	29,260	7,740	160,106	
1873....	170,652	3,500	34,786	13,714	222,652	
1874....	191,933	7,000	36,528	6,353	241,614	
1875....	375,517	9,050	39,401	12,607	436,575	
1876....	525,966	21,490	39,382	10,306	567,774	
1877....	560,587	25,031	40,430	11,924	607,972	
1878....	732,228	36,120	42,906	8,556	819,814	
1879....	528,972	56,290	56,780	5,464	1,047,506	
1880....	1,203,173	112,958	72,424	8,462	1,387,015	
1881....	1,539,157	146,946	89,763	8,047	1,778,912	
1882....	1,606,450	160,543	85,080	9,014	1,945,005	
1883....	1,654,627	135,679	80,455	5,508	1,874,359	
1884....	1,540,595	131,617	59,063	5,111	1,736,985	
1885....	1,701,762	149,381	64,511	1,696	1,917,350	
1886....	2,541,493	245,250	80,600	2,651	2,870,008	

Our total production in 1886 was not only the largest in our history, but it was the largest annual production in the history of any country. Our magnificent steel industry has been wholly created within the last thirty years.

It is a noteworthy fact that the period in which these magnificent illustrations of the creative power of protective tariffs have been achieved has been characterized by a continuous decline in the market price of steel in all its various forms.

In the course of a published interview, Mr. Secretary Lamar recently spoke very sadly of the condition and prospects of the agricultural sections of the Old South—the cotton fields apart from railroads, mining and manufactures. A wide range of observation enables me to confirm his statement that in these parts of the South "improvements are not kept up, and there is a general air of poverty, want of thrift, and the allowing of things to go to decay." In reply to the question "to what cause do you attribute it?" he said: "I don't know. If I did not know how little influence legislation actually has upon industry, I should say that the tariff was the chief cause." A fairer minded man than Hon. L. Q. C. Lamar one never meets in intelligent controversy, and this remark shows that in making it he entered a domain of science with the elements of which he is evidently profoundly ignorant. Contenting myself for the present by inviting his attention to the illustrative statements touching the production of iron and steel in this country, just presented, I promise to recur to the substance of his statement in my next letter, in which I propose to speak of visits to Cedartown, Rome, Talladega and other towns, in the vicinity of which I saw worn-out and moribund cotton fields which had been bought, with all improvements upon them, at less than \$2 per acre, the atmosphere about which was redolent with the fragrance of blossoms and fruit, the presence of which attested the creative power of man when co-operating with nature, instead of persistently defying her methods, and striving to constrain her to obey his preconceived theories. If, meanwhile, my friend Lamar will do me the favor to read Henry C. Carey's volume entitled "*The Slave Trade, Domestic and Foreign*," he will, I believe, find himself almost if not altogether persuaded that no other human agency exercises such potent influence upon industry and the rewards of labor as legislation.

But well nigh omnipotent as is revenue

legislation in preventing or promoting the development of the natural resources of a country, and the productive capacity of its people, it cannot control local and temporary influences. No human agency can regulate the weather or avert the effects of drought, excessive rain or unseasonable frosts, or prevent the ravages of entomological pests which, after affecting localities, disappear as mysteriously as they came; nor can legislation enable man to grow tropical plants in a frigid climate, or to make iron or steel without adequate supplies of ore, fuel and limestone in reasonable proximity to each other, and to the furnace in which they are to be used. Nor will the utmost abundance and closest juxtaposition of ore, fuel and fluxes in themselves create or sustain a notable iron industry. These vital elements must be supplemented by adequate supplies of human and animal labor, and such agricultural resources as can meet the wants of the iron workers, whether animal or human. Indeed it is this dependence of manufactures upon neighboring farms for green crops, fruit, eggs, poultry, veal and lamb, that interests farmers in the widest possible diversification of manufacturing industries as the only sure means of providing cheap wares and fabrics for themselves and their dependents, and a neighboring market for such of their productions as are perishable, or will not bear distant transportation. I have in mind facts which are within the knowledge of Southern men, and of interest to many of them, which prove that legislation may extirpate profitable industries, and others showing that no measure of protection will compensate for want of judgment in locating, or skill and prudence in managing establishments involving the employment of capital and labor.

The people of Alabama, Georgia and Tennessee produce not only iron, but, as all the world knows, are large producers and shippers of cotton, and consequently large consumers of iron cotton ties. While Alabama was but a comparatively small producer of iron, she furnished a very appreciable percentage of the total weight of cotton ties consumed in the country, but now, when she stands fourth in the list of iron-producing States, she makes no cotton ties. How is this remarkable change to be accounted for? A protective duty had made their manufacture *profitable* to Governor Rufus W. Cobb and his associates in the cotton tie mill at Helena, near the Helena Coal Mine, on the South & North Alabama Railroad. The business was of advantage to the owners of the coal mine, the ore bed, and the railroad company and their numerous laborers, as well as to the owners of the cotton tie mill and their laborers; and it was abandoned simply because legislation removed the protective duty without which the production of cotton ties in this country involved loss. To have continued to make ties under the reduced duty would have impoverished the owners of the mill, and it was consequently abandoned. Again, the people of the Southern States purchase annually hundreds of thousands of tons of barbed and other fence wire, for which American mills, prior to 1883, furnished the iron or steel rods of which this wire was made. Now we make no iron wire rods. The privilege of supplying the South with these rods and with cotton ties would have been a boon to the people of the whole section. But her Representatives in Congress, with almost perfect unanimity, voted to reduce the duty to a figure which denied profit to American manufacturers, and by this legislation extirpated the wire-rod industry also. Of the two articles, cotton ties and wire rods, there were imported during the last fiscal year 164,962 tons, at the invoice price of \$4,229,200. In view of these instances, it can hardly be denied that legislation may

prejudice and destroy the opportunities and rewards of enterprise and labor.

But, omnipotent as legislation is within the sphere of human practicabilities, it cannot avert the consequences of such blunders as the erection and equipment of costly furnaces in dependence upon impracticable ore beds or where a supply of available fuel and fluxes cannot be obtained at all times and at reasonable cost. In these respects "boomers" of towns and town lots near which badly-located furnaces have been, or "are to be constructed," have not only illustrated the fact that the protective system cannot save them from the consequences of their folly, but have inflicted incalculable damage upon the iron and real estate interests of Tennessee, Alabama and Georgia. Indeed, the business of "booming" town lots by constructing or promising to construct furnaces near to them, has been carried to dangerous excess. Conservative trade journals in the South are outspoken in denunciation of this reckless waste of capital. And it should be borne in mind that such improvident investments are exceptional, and rather characterize the delirium of land speculation, from which many of the people of the three great iron States are suffering, than prove that the South is likely to suffer permanently from want of excellent fuel for the production of iron and its advancement to cutlery and surgical instruments.

The pressing need of the iron trade of the South at this time is, however, not the means of increasing her output of crude iron, but an increase of foundries, forges and factories to consume the increased quantity of iron she will produce from year to year.

Writing to me at Anniston on the 1st of April, Mr. Swank urged me to press this consideration upon the attention of those of the people to whom I might have access. "If," said he, "you should speak on this subject before returning home you would do the South a kindness by pressing home to it the truth that the more it builds up manufactures to *consume* pig iron the more Southern pig iron will be needed. The South should be self-sustaining in meeting its wants for iron of all kinds; but what do we see? It sends its pig iron largely to the North to be sold, and buys from the North a large part of its stoves, wagons, plows, shovels and other agricultural implements, which are wholly or largely composed of iron in advanced forms."

I cordially endorse these suggestions; but whether the increased output of iron in the South comes from increase of forges, foundries or factories, or shall continue to come chiefly from furnaces, it will promote the industrial independence of the nation. As yet we are unable to supply our own demands for either crude or finished iron. The politicians delude the planters and farmers, whose confidence they enjoy, by telling them that our tariff is prohibitory, and that by securing a monopoly of our market to our own iron workers, it enables them to make undue profits, and thereby impoverish their agricultural countrymen. No plausible statement could be wider of the mark than this. The truth is that all England has just been constrained to record the fact that the iron market of free-trade Britain was, during last year, saved from complete paralysis by the demands for her iron and steel from the protected market of the United States; the truth being that our duties are not only not prohibitory but, in many instances, such as in the cases of cotton ties and wire rods, have not been found heavy enough to protect established concerns in the midst of coal beds, iron mines and cotton plantations, in the privilege of supplying plantation requirements. The following table, which was prepared by Mr. Swank

from statistics furnished by the United States Bureau of Statistics, prove that under our "prohibitory" tariff we imported iron and steel, including iron ore, of the invoiced value of \$43,543,216.

Imports of iron and steel and manufactures thereof into the United States from all countries during the calendar year 1886:

Commodities.	Net tons.	Values.
Pig iron.....	405,180	\$ 5,454,784
Scrap iron.....	97,635	1,056,387
Scrap steel.....	11,353	145,649
Bar iron.....	32,647	1,230,456
Iron rails.....	7	166
Steel rails.....	46,571	887,267
Cotton ties.....	11,561	288,360
Hoop, band and scroll iron.....	128	2,949
Steel bands, sheets & plates.....	4,719	224,879
Steel ingots, bars, etc.....	167,257	3,298,707
Sheet, plate & taggers iron.....	6,852	518,417
Tinplates.....	288,761	17,504,976
Wire rods.....	153,401	3,940,849
Wire and wire rope.....	2,680	512,389
Anvils, axles and forgings.....	963	105,072
Chains.....	669	70,883
Cutlery.....		
Files, file-blanks, rasps and floats.....		57,478
Fire-arms.....		936,554
Machinery.....		1,697,883
Needles.....		335,514
Other manufactures of iron and steel.....		1,518,649
Total.....		\$41,630,779
Iron ore.....	1,164,165	\$1,912,437

The effect of these enormous importations upon the British market is not a question upon which I need speculate. The prostrate condition of the market, its long continued depression and the ruinous prices, "the lowest that had been recorded for thirty-four years," that prevailed during 1886, and the source whence relief came, have been stated by those eminent British authorities, the London *Iron*, the London *Statist*, and the London *Economist*.

Says the London *Iron*, when elaborately reviewing the iron trade of last year:

"The year just closed upon us may be described as one of hope as regards the iron trade of Great Britain. Certainly anticipation of better things, rather than realization, has been the lot of those connected with it. In 1885 it was thought that the worst had been experienced, and that it would be well-nigh impossible to surpass the desperate condition of trade prevalent during that year, but 1886 has proved that to the deepest depths there is a deeper still. In only one direction could a ray of light be discerned, and that was the improvement which the exports of iron and steel began to exhibit. In almost all the other leading phases of the trade the condition of things grew blacker and blacker. Prices went from bad to worse, although there had seemed scarcely any margin for further shrinkage. Whether in pig iron, steel rails, merchant or shipbuilding iron values continued to decline. At the same time production, in iron at least, fell off largely, but notwithstanding this, stocks of pig iron in the two principal centres of production increased rapidly. Anticipations had been indulged in towards the close of 1885 that the turn of the year would bring improvement, but these were doomed to disappointment. The opening weeks of 1886 were characterized by much dullness, and the long continued depression only became intensified. Prices of pig iron broke away, that of Scotch, which was 41s. at the beginning of the year, touching 38s. 4d. about the middle of February, the lowest figure recorded for thirty-four years. In short, if it had not been for the increased quantities of iron and steel taken by the United States last year, the aggregate of the exports from this country, so far from exhibiting any improvement, would have revealed a loss of close upon 150,000 tons for the year."

The London *Statist* puts the matter thus:

"With the single exception of the American trade there has so far been no improvement in the demands for English iron. Other countries have taken less than in previous years."

And the London *Economist* says:

"It is pretty well known that the late revival in the English iron trade was largely, if not exclusively, due to an increased demand from the United States, which set in during the latter part of 1886."

These national and international statistics and considerations are neither far-fetched nor wide of the mark in a letter on the iron industry of the South addressed to the country through a SOUTHERN INDUSTRIAL AND HARDWARE NEWSPAPER, as the MANUFACTURERS' RECORD is. It can certainly do no harm to the Southern

people to tell them that last year we imported more than \$43,000,000 worth of iron, which she could have produced had her material resources been thoroughly developed, and her laboring people been trained in manual dexterity and industrial art. But, if this sweeping proposition be doubted, the most dismal pessimist will admit that she may produce her own tools, builders' hardware and railway supplies, including rails of iron or steel. Yet in all these respects she is lamentably deficient, as a single illustration will suffice to prove:

"Since 1880 14,336 miles have been added to the railroad mileage of the South. The Southern States east of the Mississippi have only a mile of railroad to 23 square miles of territory, while the Northern States east of that river have a mile of road to each seven miles of area; to equal that proportion the South must build 54,000 miles of new road."

But, says my pessimistic friend, "your assertion that the South can ever make her own steel rails from native ores is mere swagger. The assertion that she can do so is denied by many and credited by but few experienced metallurgists."—"Nor," adds he, "is her supply of mineral fuel believed to be adequate in quantity or quality to create and maintain a great iron and steel industry." Happily for the country, the gloomy forebodings of my interlocutor are the result of his dispeptic condition, and not of an investigation of the mineral resources of the South. In my letter of the 15th of last December to the MANUFACTURERS' RECORD, I alluded somewhat elaborately to the South Tredegar Bessemer Nail Works, of Chattanooga, and said "it is remarkable for the perfection of the nails it produces." The pig iron it converts is made from the Cranberry ore of North Carolina; the fuel used is coke made from Tennessee coal, and its laborers are, and I made special note of the fact, young negroes who have had no previous mechanical training. The capacity of every department of these works has just been doubled. And since the 7th of May, on which date the Roane Iron Co., of Chattanooga, completed its Bessemer plant and nail mill, that company has drawn from North Carolina and Tennessee the ore, fluxes and fuel from which it has made 250 tons daily of first-class Bessemer rails. Through the courtesy of Mr. Swank I am able to give an authentic statement of the progress of these works, from a recent letter of the accomplished and energetic president of the company, Capt. H. S. Chamberlain, who says:

"The Roane Iron Company built two 8-ton open-hearth furnaces in 1878, and in December, 1878, we made our first steel rails. No Bessemer ore had at that time been developed in the South, and pig iron and crop ends were brought principally from England, although small quantities of pig iron and rail ends were purchased from time to time in the East. These furnaces continued making steel for rails until January, 1883, when, on account of the depression in the steel rail trade, they were closed down, and have not since been operated. The development of the Cranberry ores in North Carolina giving us a cheap Bessemer ore of the highest quality (phosphorus being only from 0.009 to 0.013 per cent.) led our company to begin the construction of a Bessemer plant in the fall of 1886. The plant as finished consists of one 5-ton converter, but everything has been built with a view to erecting a second vessel should it be deemed advisable. On May 7th, at 5.37 P. M., the vessel was turned up with a charge of 7,800 pounds of metal, and at 5.57 the first steel was poured. Three ingots were made, which were rolled into ten 56-pound rails of full length and superior quality. The iron used was made at our furnaces at Rockwood, Tenn., from Cranberry ore."

But the Cranberry mines are not the only local source of supply on which Southern steel makers must depend. It is, I believe, not doubted that large deposits of manganese and magnetic ores have been found near Cartersville, Ga.

A recent incident in the story of Anniston has its place in this discussion. As

long as they controlled the Woodstock and Clifton companies and confined their operations to the production of charcoal iron, the question of mine al fuel was one of minor importance to Messrs. Noble & Tyler. But when they entertained the proposal to capitalize the Anniston City and Woodstock properties, and determined to open their accumulated resources to the enterprise of the country, the question of an exhaustless supply of coking coal assumed importance. They already owned many thousand acres of coal, the coking qualities of which had not been proven, and the quantity of which, though large, was not equal to the demands of Anniston's future shops. In accordance with their policy of anticipating possible necessities, they employed experts to examine the coal fields within available distance. Specimens of coal from all were collected, and contemporaneously with the announcement that preliminary work had been commenced on the two great coke furnaces of the newly organized Woodstock Company, the fact was made public that Messrs. Tyler & Noble had invested \$550,000 in the purchase for the exclusive use of the people of Anniston of the property of the Cahaba Coal Company, and proposed to nearly double the investment in the work of sinking slopes and shafts sufficient to increase the output from 15,000 tons per month to 60,000 tons, and the immediate construction of 500 coke ovens. That those who are skilled in such matters may form an opinion of the quality of this Alabama coal, I submit two analyses of it, which I obtained when in Anniston in April. They represent a car load which had been coked for 50 hours in the Woodstock ovens, and are as follows:

No. 1.	No. 2.
Volatile hydro-carbons.....	4.508
Fixed carbon.....	87.007
Sulphur.....	0.745
Ash.....	7.140
	8.080

But if for the present there should seem to be in this section of our country, so affluent in diverse mineral resources, a lack of certain qualities of ore or fuel it would prove nothing. The country has not been scientifically explored. Indeed, a good geological reconnaissance of Alabama, Georgia and Tennessee has not been made. But the South will not depend exclusively upon these States, or those contiguous to them, for her future supply of ores and fuel.

The construction of the Suez Canal and of the first Pacific railroad revolutionized the commercial geography of the world, and the completion of the roads now in process of construction, by which the iron mines and coal measures of Colorado are to be connected with Galveston, will modify essentially the commercial relations of the Gulf States. Galveston will then be as near to Denver and Pueblo as Chicago is to New York. The magnificent Bessemer rail mill, nail works, &c., of the Colorado Coal & Iron Company, at Pueblo, depend on local ores, coal and coke, the exhaustless stores of which she can share with the people of the Appalachian hills. As remarkable an increase of possibilities is imminent in another direction. The statesmen of Arkansas have not yet permitted themselves to be persuaded that any political or economic progress has been made since 1798, and one of them, Mr. J. Poindexter Dunn, during the last session of Congress, closed a philippic against the developing influence of the protective system with an elaborate, eloquent and original oration, with the identical thoughts, illustrations of fact, and felicitous choice of words that had been used in defence of free trade by Mr. Poulett Thomson, an English statesman, more than 57 years before. But the world moves, and the spirit of the New South will some day penetrate Arkansas and possess her people; for a slight extension to the west, which must soon be made, of

the Memphis & Charleston Road will open to the furnaces of Nashville, Chattanooga, Birmingham, Anniston and South Pittsburg inexhaustible supplies of magnetic ore as rich in Bessemer steel producing qualities as that of the mines of Michigan, Wisconsin and Minnesota, from which Illinois, Ohio, Pennsylvania, New York and West Virginia now draw part of their ores. In view of these facts, may I not answer the questions: Can the South ever make steel, and where can she obtain a supply of fuel? by denouncing them as the vaporings of vanity.

But in my judgment the future of the South depends largely upon a higher question than that of material supplies. A trained and courageous and ambitious man is largely the master of his environment. The South is blessed with an abundant supply of hardy, docile and faithful laborers, many of whom, as recent educational efforts have shown, are endowed with more than average intellectual gifts. It cannot, however, be said that they are generally educated, or that any of them have the trained hands and eyes which are as essential to the skilled artisan as they are to the artist. The pre-eminent want of the industrial South is the training of the hands and eyes of the laborers to co-operative action, which is often successfully imparted in infancy in the kindergarten, and their training to familiarity with mechanical implements and their uses and in industrial art as is done at the Cooper Institute, New York; Spring Garden Institute, Girard College, and the Industrial Art School, Philadelphia; in the Manual Training Schools of Chicago and St. Louis, and in hundreds of institutions throughout New England and the manufacturing towns of the West. Fortunately for the South, the expertness and productive power of labor do not depend on the race, color or previous condition of servitude of the laborer or artisan. WM. D. KELLEY.

Southwest Virginia—Big Stone Gap.

[Special correspondence MANUFACTURERS' RECORD.]

ESTILLVILLE, VA., July 11, 1887.

The railroad activity now displayed in Southwest Virginia is marvellous and incomprehensible to its present inhabitants. Suddenly and unheralded some of the most powerful railroad corporations on this continent have invaded this section and surveyed and located lines. The activity and energy displayed by the various companies is bewildering. It has long been known that the Appalachian system of mountains is the richest metalliferous region perhaps in the world. In the northern section of this region free labor began its development in New York and Pennsylvania more than forty years ago, and the result was the building of one of the greatest manufacturing and iron centers in the world—Pittsburg. Sixteen years ago at the southern extremity of this system Birmingham came suddenly before the public gaze, and in that brief period has become an important point of manufacturing and distribution of iron products and coal. The middle region of this section, the very heart, is now recognized by scientists as the most valuable of this whole system.

I assume that the center of this vast system of mountains is Western North Carolina, East Tennessee, Southwest Virginia and Eastern Kentucky. In this undeveloped region, if we are to believe the statements of the most learned geologists and mineralogists and the testimony of countless others whose statements are entitled to credit and weight, there are inexhaustible quantities of coal, iron ore, zinc, copper, lead and many other valuable minerals. As soon as these facts were published by such high authority capitalists rushed in and have bought up large quantities of valuable mineral and

timber lands, and hence railroads are projected for their development.

These railroads must of necessity seek a common center and that common center has been indicated by the hand of the Almighty, and that only at one point—Big Stone Gap in the southwestern part of Wise county in the State of Virginia. Approaching this place from either point of the compass, we find that nature has leveled down this rugged region by water gaps in the mountains so that there will scarcely be a tunnel on any of the eight railroads that are now projected to this place, and the grades on none will exceed at any place seventy-eight feet to the mile, as I am informed.

The first railroad projected to this place is the South Atlantic & Ohio, which is already completed to Estillville, a distance of 32 miles from Bristol on the Norfolk & Western, its eastern terminus, leaving 33 miles yet to build, on which several hundred hands are now working. The whole line will be completed within less than one year.

The next is the Louisville & Nashville, which is pushing a branch road from Corbin Station in Bell county, Kentucky, to Big Stone Gap, a distance of about 90 miles. Its line has been located and there are now 600 hands working on it.

The Norfolk & Western Railroad Company have surveyed a line from Graham Station in Tazewell county on its New river branch road to Big Stone Gap, a distance of 102 miles. Thirty miles of this road, which is called the Clinch Valley extension, has been let to contract, on which there are nearly one thousand hands working. All three of these roads will be completed within one year.

The Virginia Western from Buchanan on the Richmond and Allegheny has already been surveyed to Big Stone Gap. The Tennessee Midland from Memphis by way of Nashville is being located to the same point and the Kentucky Union from Lexington, I am assured, will be rapidly pushed to this point. The Charleston, Cincinnati & Chicago, popularly known as the three C's, are locating their line to the same point; so that Big Stone Gap will, in the near future, become one of the most important railroad centers in the South; and the rapidity with which development now takes place in this country, the inexhaustible resources of the surrounding country, its unrivaled position, its climate, its minerals and timber, the certain completion of several lines of railroads to this point within a year, has already brought it to the attention of the outside world. Here a town is sure to spring up that will, in a short time, make it equal in manufacturing and commercial importance to Knoxville, Chattanooga and Birmingham.

Already capitalists have bought up the land and will, within a few days, lay out the city. The place selected for the city is one of surpassing beauty and picturesqueness. To the West and North the rock ribed crest of Stone mountain, covered with primeval forest trees, is visible for miles. Through this mountain, Powell river has torn and rent its course, making a gap of awful grandeur. Through the gap the river rushes and seethes over boulders and ledges of rocks, with a fall of 90 feet in less than a mile. South and East of Stone mountain and running almost parallel with it at a distance of about two miles, Waldens ridge extends. At the foot of this ridge runs Little river. The valley between these two mountains extends ten miles above the Gap to where the mountains unite, and to the Southwest it lengthens and broadens into the rich fertile agricultural valley of the Powell river. The valley and scenery at the gap is the most beautiful that the imagination can paint. It is blessed with a pure and salubrious atmosphere. Situated in the mountains, the air is healthful and invigorating.

This is merely a brief introduction to this place, and those who feel any interest can learn such further details as they may desire

by communicating with John R. Proctor, state geologist of Kentucky, Frankfort; Prof. John J. Stephenson, of the University of the city of New York, one of the most eminent geologists and mineralogists in this country; Prof. Platt, of Philadelphia; Prof. McCrae, of Pennsylvania, none of whom, I believe, have any interest in the place, or Barton Myers, mayor of Norfolk city.

MARTIN.

Improved Variety Saw with Bevel Table.

We illustrate herewith a new variety saw with bevel table, for which the makers claim a nearer approach to perfection and the wants of the trade than any yet introduced. The machine being all iron and steel, the great variety of work it can be adapted to, and the precision and accuracy with which it can be handled, the convenience of adjustment, and the strength and durability of all its parts, make it a standard machine for ripping, cross-cutting, beveling, cropping, grooving, mitering, etc. The machine is self-contained, the frame being a cored pedestal supporting the table and car-

MINING NOTES.

By T. K. BRUNSWICK, Raleigh, N. C.

BIG RUSSELL MINE.

Considerable interest attaches to this mine, situated in Montgomery county, this State. It is owned and operated by an English company, and has been producing constantly for some months. Just how much this amounts to the public is not informed. The management shipped to London 47 ounces of bullion for the fortnight ending June 4th, this year, and this may serve as a guide to the average yield at this mine. Nine hundred and forty dollars for two weeks' work is not a large yield for the property, and those who are familiar with it may feel that it is small, yet there is one point about it which should not be lost sight of, and that is that the ore supply is immense, and if the company are making the present work pay there is no end to the ultimate result, at least for years to come. Few mines in the South have such a lode of ore, and it only requires economical and persist-

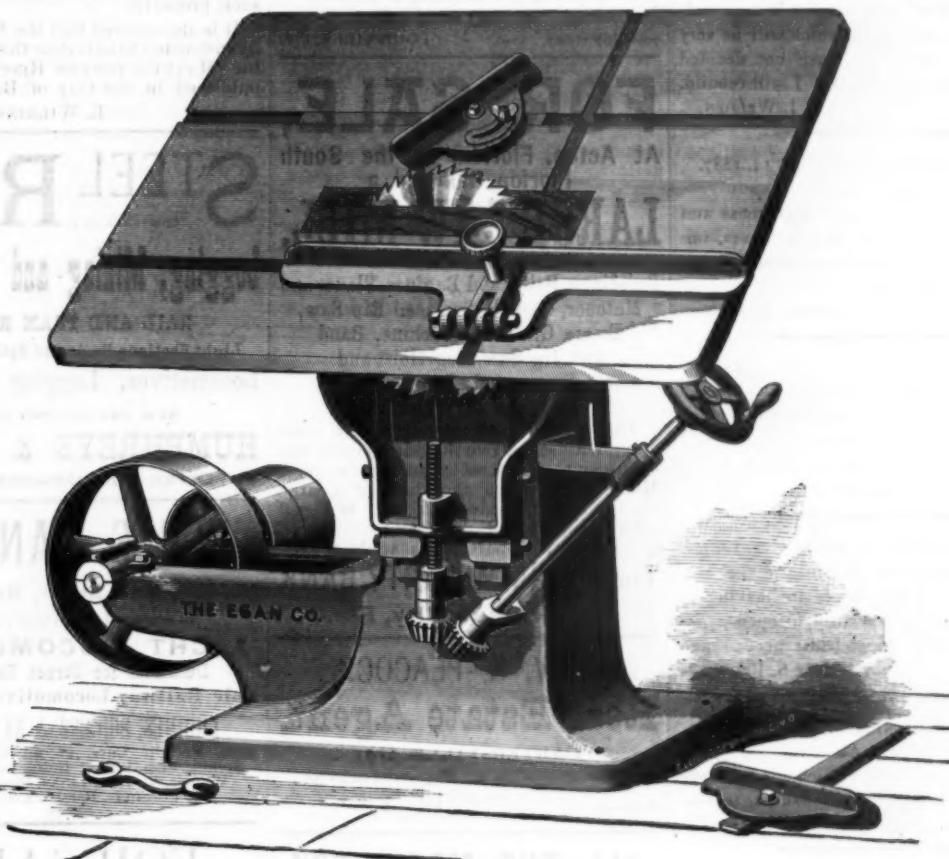
their intention to develop the property as soon as the railroad prospects, which are bright, have become an assured fact.

Another company of Atlanta capitalists have made large purchases of talc lands in the same county. They have organized the Atlanta Talc & Soapstone Mining & Manufacturing Co., with a capital of \$250,000. The main office is at 28 South Pryor street, Atlanta. They propose to operate the mines on a large scale and to eventually go into a regular manufacturing business.

This shows that more than ordinary interest is being taken in the mineral lands of the trontane section, and that in the region named there seems to be a rush for the best lands. No more flattering prospects in bargains of this kind exist in the State. The country is full of prospectors and the gist of the matter is that Cherokee is not far from a boom.

SAM CHRISTIAN MINE.

Mr. Chas. Armstrong, the superintendent of the Sam Christian Mine, has gone to Philadelphia to consult with the owners of this famous old property. The immediate cause of the visit is traceable to certain litigation—a suit by an Amalgamation Process



IMPROVED VARIETY SAW WITH BEVEL TABLE.

rying the countershaft. The table is of cast iron, well ribbed and braced, and can be set plumb at right angles with the saw, or adjusted to any bevel up to forty-five degrees. The table is raised and lowered in planed, gibbed ways, with adjustment for wear. The mandrel is of best cast steel, and runs in self-oiling boxes. The fences can be used on either side of saw, giving the operator every advantage and convenience, especially when using the table on a bevel. This point will be appreciated by the practical sawyer. Furniture, chair and bracket factories, planing mills, carpenters, pattern and wood-shops of all kinds will find this a great addition to their machinery, and a quickly adjusted saw for almost any purpose. For further information and prices address the manufacturers, the Egan Company, 228 to 248 West Front street, Cincinnati, Ohio.

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the MANUFACTURERS' RECORD.

ent effort to make an almost endless job to work it out at a profit.

GOLD HILL.

The London company are making another effort to revive interest in this property. There are conflicting opinions as to the wisdom of this undertaking, some thinking that it has been worked to a point where it will no longer pay to lift the ore, while others think that indifferent mining and poor management are the causes which have proven disastrous to the mine during recent years. Capt. Harvey is in charge of the work going on there now. It is exclusively prospecting in the old levels and drifts of the mine, and from his last report to the London stockholders it seems that he has not been altogether unsuccessful. Work has not progressed to sufficient extent to enable a just criticism to be made, but unless more money and energy is introduced the mine will hardly be opened this season.

SALE OF MINERAL LANDS IN CHEROKEE.

A company of Nashville (Tenn.) capitalists have made a large purchase of mineral lands in Cherokee county. They have selected a very large tract of land, which is rich in iron and manganese ores, and it is

Co. It seems that they rented a portion of the mine and worked it; results not coming up to expectation they entered suit for misrepresentation of the facts. Mr. Armstrong says that they are not likely to gain anything by the suit, and he claims that the evidence is overwhelming to the effect that the machine is at fault.

THE REYNOLDS MINE,

of which this paper has had much to say in the past, is now claiming attention by a party of investors. The property has as fine prospect for successful mining as any in the State. The vein is two feet thick and free gold is visible to the natural eye in a great deal of it. It is traceable for a long distance and is supposed to be continuous. The only work done so far is but a make-shift, being conducted as most all the preliminary work in that country is, without any machinery, save a small Chilian mill for reducing the ore. The material used has paid very well by this mode of treatment and promises better things for the future.

If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year, or six months for \$1.50.

Will Build a Large Hotel.

BIRMINGHAM, ALA., July 11, 1887.

Editor Manufacturers' Record:

The hotel at Rome, Ga., is to be 174 feet on Howard street by 90 feet on Court street; to be five stories, with all modern improvements, and to cost from \$125,000 to \$150,000. Work to begin at once, and hotel completed in 12 months.

R. T. ARMSTRONG.

Will Build Water Works.

BESSEMER, ALA., July 11, 1887.

Editor Manufacturers' Record:

The Bessemer Land & Improvement Co. will build water works at once.

H. M. McNUTT.

PARIS LANDING, TENN., July 12, 1887.

Editor Manufacturers' Record:

My machinery, consisting of a saw mill, stave, heading and shingle machinery, together with main buildings, substantial frames, covered with shingles, and 190x40 feet, were consumed by fire on the night of June 25th. Two long sheds and most of the stock on hand were saved. Was partially covered by insurance, which will be very satisfactorily adjusted. Have not decided about rebuilding; think that I will rebuild.

A. J. WELDEN.

LOUISVILLE, KY., July 14, 1887.

Editor Manufacturers' Record:

We shall put up a large warehouse and transfer-house in Fort Worth, Texas, immediately, for the accommodation of our North Texas business.

B. F. AVERY & SONS.

YOUNGSTOWN, OHIO, July 15, 1887.

Editor Manufacturers' Record:

We have under consideration the removal of our works to Chattanooga.

THE WM. ANSON WOOD MOWER & REAPER CO.

GREENSBORO, N. C., July 13, 1887.

Editor Manufacturers' Record:

Myself and a few others are making an effort to get up \$20,000 stock to open a roller flouring mill. It is badly needed and would pay.

SAMPLE S. BROWN.

RICHMOND, VA., July 12, 1887.

Editor Manufacturers' Record:

We propose to build to Richmond College a dining hall, with appurtenances, to cost about \$7,000.

H. H. HARRIS.

NATCHEZ, MISS., July 13, 1887.

Editor Manufacturers' Record:

We have established a medicine factory here under the firm name of the Sore Wash & Eye Lotion Co.

SORE WASH & EYE LOTION CO.

MACON, GA., July 12, 1887.
Editor Manufacturers' Record:

I have the contract for building a jail at Vienna, in Dooley county, Ga., to cost \$7,500.

T. B. ARTOPF.

**25,000 ACRES
OF
Cypress Land**

Heavily timbered with wood of the best quality. Adjacent to railroad and streams. Contains also a large amount of WHITE OAK, RED-BAY, PENCIL CEDAR and other valuable woods of commerce. Soil the most productive in the world. Best bargain to be had in the South. Principals should apply direct to owners.

WILLIAMS & SWANN, Fernandina, Fla.

WANTED!

A situation as Boss Weaver and Loom Fixer in the South, by a competent man with 18 years experience. Can fix and run any make of loom. Am a married man 35 years old. Satisfaction guaranteed. Moderate wages expected. Can give the best of references as to ability and sobriety. Would be pleased to correspond with parties needing a good man of my kind. Am not out of work. Good reasons given for wanting to make a change. Address

J. F. GAINER,
709 Ohio street, LOUISVILLE, KY.**FOR SALE,
At Acton, Florida, on the South
Florida Railroad, a
LARGE SAW MILL,**

WITH
Buildings, Boiler and Engines, Planer and
Matcher, (Double Surface,) Rip Saw,
Emery Grinding Machine, Band
and Jig Saw, Log Hoist and
Drum, and Pump for
Elevating Water.

The entire outfit complete and in good order, with about two thousand logs in the boom and considerable lumber in yard. Mill is situated on the shore of a large lake, in a well wooded country. Will sell entire property for \$6,000.

For further particulars, apply to

The KISSIMMEE CITY BANK
Kissimmee City, Fla.**D. W. K. PEACOCK,
Real Estate Agent,**

CARTERSVILLE, GA.
Minerals a Specialty.
Refers to { THE HOWARD BANK, Cartersville, Ga.
J. W. RANKIN, Atlanta, Ga.

ALL THE MACHINERY

In mill, 10,000 spindles, will sell in lots as wanted. Chance for bargains if looked after soon. Ready for delivery now.

L. GODFREY.

Machinery Agency, 26 Exchange Place,

PROVIDENCE, R. I.

HILLEARY, KEITH & KIRKPATRICK**Real Estate AND***** Stock Brokers,**

106 21st St., Birmingham, Ala.

Real Estate Advertiser, containing interesting articles concerning Birmingham and Anniston, with a large list of city and suburban property, mineral and timber lands, sent FREE to any address.

COPY OF ORDINANCE

Passed by the Council of the Town of West Point, Virginia, on the 21st day of April, 1879, and re-enacted and approved on the 22d day of March, 1887.

Be it ordained by the Council of the Town of West Point, Va., that any party or parties investing in property in this town for the purpose of conducting any enterprise, such as manufactoryes, packing houses, &c., and actually operating the same, they shall be exempt from all corporation taxes upon such property, and all machinery and improvements thereon, for the term of ten years from the purchase of such property.

It is also ordered that the Mayor is hereby instructed to advertise this ordinance in the "MANUFACTURERS' RECORD," a paper published in the City of Baltimore, Md.

E. WILKINSON, Mayor.

STEEL RAILS

COMPLETE OUT FIT FOR

Logging, Mining and Plantation

RAIL AND TRAM ROADS.

Light Sections Rails and Spikes in stock.

Locomotives, Logging Cars, etc.

NEW AND SECOND HAND.

HUMPHREYS & SAYCE,
OFFICE NO. 1 BROADWAY, N. Y.**WM. E. TANNER,**

No. 1415 Main Street, Richmond, Va.

Is prepared to furnish promptly

LIGHT LOCOMOTIVES,

Dummies for Street Railroads,

Pole Railway Locomotives and Cars,

ENGINES, BOILERS, & SAW MILLS.

Also, Freight Cars, of all styles, Railroad Spikes, Fish Plates, Bolts, Car Axles, Car Wheels, Trucks, Links, Pins, and other Car Forgings, Bar Iron, Steel Horse Shoes.

FOR SALE.

1 second-hand 4 horse power boiler and engine; 1 No. 2 Kissel hand punch, second hand; 1 second-hand 4 ft. stave joister, for butter tubs; 1 wood frame rip saw, NEW; 1 emery wheel stand, collars on both ends; also, 1 lot 8 arm pulleys. The above for sale cheap, or will trade for 24 inch iron planer.

Address ULRICH & ALLISON, Rock Falls, Ill.

**Cotton Machinery
FOR SALE.**

The Machinery of a 6,000 Spindle Spinning Mill, consisting of Openers, Cards, Railway Heads and Troughs, Drawing Frames, Slubbing Intermediate, Roving, Spinning and Twisting Frames. All in first-class condition. For particulars apply to

PAWTUCKET THREAD CO.

PROVIDENCE, R. I.
Or to C. R. MAKEPEACE, Mill Engineer,
Providence, R. I.**REAL ESTATE IN A
Booming Alabama Town
FOR SALE.**

Three Hundred Choice Business
and Residence Lots in the
CITY OF ANNISTON.

This property is the best in the city, and having been bought before the boom, will be sold at prices affording investors a rare opportunity to make certain and handsome profits. Address

F. M. HIGHT, Anniston, Ala.

For Sale.

A large vein of Argentiferous Galena Ore, that assays \$50.00 to \$80.00 per ton, Silver, Gold and Lead.

Developed and ready for machinery, with 150 acres of land and fine water power. Ten (10) miles from railroad.

For particulars address

J. W. STEWART,
Box 304, Knoxville, Tenn.**Cotton Mill Wanted.**

Jackson, Tenn., with a population of 10,000, and in the cotton belt, has already subscribed \$66,665 in cash, and will donate a site of from three to five acres of land toward securing a \$200,000 Cotton Mill.

Practical cotton mill people of means who desire the remainder of the capital stock, and who are competent to take charge of and run the mill, will find it to their interest to correspond with

L. J. BROOKS,
W. B. TIMBERLAKE,
For the citizens of Jackson.**For Sale, Cheap.**

Two Second-Hand Horizontal
Tenters, with Pin Chains.

Steam Pipes for Drying, and Engine for
Driving. For further particulars address

X. Y. Z.,
Care MANUFACTURERS' RECORD.**LEDBETTER & CO.
Land and Loan Association.**

(INCORPORATED.)

Commission Dealers in Lands, Stocks and Bonds.**City and Mineral Property a Specialty.****Capital Stock**
\$100,000.

— REFERENCES —

First National Bank, Anniston, Ala.
Col. Jno. M. McKleroy, Prest. Anniston City Land Co.**ANNISTON, ALA.**

— CORRESPONDENCE SOLICITED. —

CONSTRUCTION DEPARTMENT.

EPUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

Anniston.—The Anniston Ice Co. will increase their capital stock and put in larger machinery.

Anniston.—Grace Episcopal Church will erect a rectory on Quintard avenue to cost \$8,000.

Anniston.—It is stated that the capacity of the iron foundry of Murray & Stevenson will be doubled.

Anniston.—R. H. Cobb and others are organizing a stock company to erect a 4-story building, 70x120 feet, on Tenth street. Chisolm & Green have prepared plans.

Anniston.—It is stated that the Mechanicsville Land Co., reported last week as organized, will build 40 houses.

Anniston.—W. H. Jeffers will receive proposals until August 1 for building a school house. The cost is to be about \$10,000.

Bessemer.—J. C. Harte has the contract to sink 13 artesian wells.

Birmingham.—Mr. Caldwell has erected a mill at Eastlake.

Birmingham.—The Birmingham Safe & Lock Co., previously reported, has been organized with H. F. Bridewell as president and general manager; G. P. Droomgoole, secretary, and E. T. Enslen, treasurer. Will at once erect buildings at Gate City.

Birmingham.—Z. T. Copening has been awarded the contract to build 60 miles of the Mobile & Birmingham Railroad.

Birmingham.—Plans have been prepared for a large rolling mill and a nail factory to be established by New York parties and the Elyton Land Co.

Birmingham.—The capital stock of the Alabama Ice & Cold Storage Co., previously reported, is \$80,000. The capacity of their factory will be 40 tons daily. J. Rutherford is general manager.

Broken Arrow.—The Eureka Coal & Coke Co. are developing coal mines. They have built 60 coke ovens.

Calera.—The Calera Spoke & Handle Factory contemplate increasing their capital stock.

Cropwell.—It is reported that two saw mills and a ginnery will be erected and a brick-yard started.

Cross Plains.—The Pell City Land Co., previously reported, has been organized with Thomas M. Levy, of New York, as president; John W. Inzer, Ashville, vice-president; T. S. Plowman, Talladega, secretary, and Mr. Levy, New York, treasurer.

Dallas.—Crenshaw county will build a new jail.

Florence.—Charles Revelle is starting the steam laundry reported last week.

Gadsden.—The Gadsden Car Manufacturing Co. have commenced work on the car works previously reported to be erected. Will employ 200 hands and have a daily capacity at first of 5 cars.

Helena.—It is reported that one or more lumber mills, burned some time ago, are being rebuilt.

Huntsville.—New York, Baltimore and Cincinnati parties have purchased 720 acres of land for about \$65,000. They will improve the property, establish manufactories, etc. A. Campbell may give information.

Hurtsboro.—The Hurtsboro Mill Co. have completed their ginnery.

Isbell.—It is reported that arrangements have been made for building two iron furnaces at Isbell. J. E. Isbell can give particulars, if correct.

Leeds.—The Leeds Land & Manufacturing Co., capital stock \$100,000, has been chartered by Walter Smith, Benjamin F. Roden and William H. Morris, of Birmingham.

Montgomery.—B. B. McKenzie has received the contract to build a wharf to cost \$2,600.

Montgomery.—A spoke and handle factory is to be established at Riverside. The capital stock will be \$25,000. The Montgomery Land & Improvement Co. will give particulars.

Montgomery.—A bucket and barrel factory will be started at Riverside. The Montgomery Land & Improvement Co. will give particulars.

Opelika.—The Merchants' & Planters' Warehouse Co. has been formed to build a brick warehouse, 175x200 feet. Have purchased a site.

Selma.—Steam brick works will be started soon. Edward G. Gregory can give particulars.

Stone Hill.—J. T. B. English has overhauled and improved his mills.

Woodstock.—W. B. Martin has lately purchased some new machinery for his planing mill.

ARKANSAS.

Arkansas City.—The Desha Lumber & Planting Co. are building a cotton ginnery.

Beebe.—A steam saw mill will be erected near Beebe by A. Philips.

Black Springs.—A lumber mill will be established by A. E. Dow.

Buckville.—The mill of John Martin is being enlarged.

Greenway.—A saw mill has been erected by Biffle & Hicks.

Hot Springs.—The New York Mining & Smelting Co. has been chartered with Mat Dorman, L. S. Thomas, D. B. Broeck, R. A. Hughes and W. H. Hughes as directors. The authorized capital stock is \$3,000,000.

Hot Springs.—J. P. Mercer contemplates forming a company to develop mines.

Hot Springs.—The Forked Mountain Mining Co. has been organized with Edward Sniffen as president; Andrew Evans, secretary, and William Wilson, treasurer. The authorized capital stock is \$1,000,000.

Kingston.—A manganese mine near Kingston is being tested with a view to its development.

Little Rock.—Burns & Fitzpatrick have received the contract to build ten miles of railroad west from Altheimer. C. E. Downs has the contract to build two miles of railroad.

Little Rock.—The Desha & Eureka Springs Railroad Co., capital stock \$3,150,000, has been incorporated to build a railroad from Eureka Springs to Pendleton, 210 miles. The directors are George P. Bangs, William L. Stowe, E. E. Pratt and H. M. Cross, of Boston, Mass., and James Murphy, W. B. Dutton and others, of Arkansas City, Ark. It is said that the road will be built as soon as possible.

Lonoke.—A flour mill is being built by P. N. Olinghouse.

Pine Bluff.—George M. Dilley & Son, of Palestine, Texas, have leased and will enlarge the iron foundry and machine shops of J. W. Bocage & Co.

Royston.—S. S. Reppy has purchased the cotton factory of the Arkansas Manufacturing Co. for \$5,000. It has 52 looms and 1,100 spindles.

FLORIDA.

Bartow.—George Lemoyne will, it is stated, shortly establish a tannery.

Cedar Key.—The Eagle Pencil Co. are putting sprinkling machinery in their pencil mill.

Cedar Key.—A Pennsylvania company propose to erect an ice factory. J. A. Gore can probably give information.

Fort George.—A company has been formed to build a railroad from Broward to Fort George, to be known as the Jacksonville & Fort George Island Railroad. Chas. Holmes is interested and can give information.

Fort Meade.—The Polk County Real Estate & Railroad Co., capital stock \$100,000, has been organized with D. Hughes, of Bartow, as president; W. B. Varn, Bartow, treasurer, and Fred N. Varn, Fort Meade, secretary.

Jacksonville.—It is stated that the cotton warehouse referred to last week will be built by Wightman & Christopher.

Kissimmee.—A proposition has been made to build water works to cost about \$15,000.

Mariana.—A hotel is to be erected. E. D. Oslin can probably give particulars.

Orlando.—The Orlando Street Railway Co. are arranging to extend their road.

GEORGIA.

Atlanta.—W. R. Stokely contemplates starting a vinegar factory at Atlanta or Dalton, but has not yet definitely decided.

Atlanta.—The Atlanta Electric Light Co. are putting in some new machinery.

Atlanta.—Bills have been introduced in the legislature to incorporate the Savannah, Macon & Birmingham Railroad Co.; the Blue Ridge & Atlanta Railroad Co.; to build a railroad from Rabun Gap to some point on the Atlantic Ocean; the Marble Valley Railroad Co.; the Central City Street Railway Co. (of Macon); the Waycross Air-Line Railway Co.; and a bill to authorize the Griffin, La Grange & Western Railroad Co. to change its name to the Birmingham & Atlanta Banking & Navigation Co., and increase its capital stock.

Augusta.—A company has been organized to build the theatre, previously reported, with John J. Cohen as president, and S. H. Cohen, secretary. Will erect a building to cost about \$50,000.

Cedar Grove.—The Chattanooga Southern Railroad Co., previously reported, have organized with William Crutchfield as president; Robert Dougherty, vice-president, and John G. Wood, secretary and treasurer.

Columbus.—The Columbus Land & Improvement Co., previously reported, has been organized with D. R. Bize as president, and E. H. Epping, secretary and treasurer.

Columbus.—The Columbus Southern Railroad Co., previously reported, have organized with T. J. Pearce as president; Nelson Tift, of Albany, vice-president, and C. B. Grimes, treasurer.

Columbus.—The Alabama King Mining Co. has been organized to develop gold mines near Jackson's Gap, Ala. B. T. Hatcher is president; J. L. Willis, vice-president, and C. E. Battle, secretary and treasurer.

Cuthbert.—Rawls & Perry will erect a cotton-seed oil mill and guano factory and a cotton warehouse. Have purchased site on Depot street.

De Soto.—The Americus Land & Lumber Co., of Americus, previously reported as to build several lumber mills, will build a saw mill and a planing mill at De Soto and a saw mill in Dooly county. Will also start a brick-yard in Dooly county.

La Grange.—Mr. Wagner, of Rome, will make a proposition to build water works.

Macon.—The Macon Gas Light & Water Co. will enlarge their gas works and put in machinery to manufacture water gas and will build a new holder of 100,000 feet capacity.

Macon.—Proposals for building the market-house, previously reported, will be received until July 25 by Alexander Proudfoot.

Marietta.—It is rumored that the Marietta & North Georgia Railroad Co. will double track 50 miles of their railroad.

Tallapoosa.—A. E. Burke, of New Orleans, La.; J. N. Carpenter, Natchez, Miss.; W. R. Pinckard, Birmingham, Ala., and others have bought the Cross gold mine, and will put in machinery to develop it. A smelting furnace will be erected.

Tallapoosa.—A large flouring and grist mill will be erected by I. M. Watson & Co.

Waynesboro.—John J. Jones will receive bids until August 2 for building a wooden jail; also a brick and stone jail.

KENTUCKY.

Covington.—The contract to build the new reservoir, previously reported, has been let to Peter, Scully & Crane, of Cincinnati, O., at \$310,377. The capacity is to be 110,000,000 gallons. It is to be completed by August, 1888.

Covington.—L. A. Brigel, H. Muhlhauser, W. B. Strubbe and J. D. Creed, of Cincinnati, Ohio, have incorporated the Southern Oil & Pipe Line Co., to develop oil, gas, mineral and timber lands. The authorized capital stock is \$10,000,000.

Greenup.—Capt. Allen will sink a gas well near Greenup.

Limestone.—An addition is being built to the Limestone Flour Mills.

Louisville.—The name of the company reported last week as to be organized by John A. Stratton and others is the West Louisville Land & Improvement Co. The authorized capital stock is \$1,000,000. W. C. Hall is president and Mr. Stratton, secretary. The company will buy, sell and improve land, locate factories, &c.

Louisville.—Jefferson Bros. will erect nine three-story buildings at a cost of \$40,000.

Louisville.—J. B. Wilder will erect a four-story building on Sixth street. It will be used for manufacturing purposes.

Louisville.—G. W. Norton & Co. will erect a \$7,500 building.

Somerset.—W. P. Bently is president; Thomas M. Thatcher, vice-president; George P. Sallee, secretary, and Robert Gibson, treasurer, of the \$250,000 oil and gas company reported last week.

LOUISIANA.

New Orleans.—H. da Ponte, 28 Carondelet street, wants to correspond with manufacturers of brewing machinery.

New Orleans.—The Louisville, New Orleans & Texas Railroad Co. have purchased 240 acres of land bordering on the Mississippi river, and will at once build large warehouse and wharves.

Shreveport.—Donley & Thomas have received the contract to build 15 miles of the St. Louis, Arkansas & Texas Railroad Co.'s branch road to Shreveport.

Shreveport.—The North Louisiana Agricultural & Mechanical Fair Association have let the contract for the erection of an exposition hall, 40x200 feet, and a machinery hall, 30x100 feet, to William Maikell.

MARYLAND.

Baltimore.—The C. A. Gambrill Manufacturing Co. will rebuild their grain elevator, reported in this issue as burned.

Baltimore.—The Chesapeake & Potomac Telephone Co. have let the contract to erect their new building on St. Paul street, previously reported, to Philip Walsh & Son. It will be six stories.

Baltimore.—C. R. Andreae & Co. have the contract to erect a four-story warehouse on Baltimore street, near Gay, for the H. R. Eisenbrandt estate.

Baltimore.—The Merchants' & Miners' Transportation Co., of Baltimore, will shortly invite bids for the building of a large passenger and freight iron steamer.

Baltimore.—The Washington Street Methodist Protestant Church will erect a new building corner of Lombard and Chester streets, 75x115 feet. Charles Ogle has the contract.

Belair.—Water works are projected to cost about \$12,000.

Catonsville.—The capital stock of the Catonsville Water Co. will probably be increased to \$60,000.

Hagerstown.—The name of the company lately reported as being formed to start a silk ribbon factory is the United Silk Manufacturing Co. S. M. Shindel is president; Charles E. Wise, vice-president, and P. A. Brugh, secretary and treasurer.

Savage.—The Baltimore & Ohio Railroad Co. will build a branch road from a point on their Washington branch to Savage, 2 miles. Surveys have been made.

MISSISSIPPI.

Columbus.—Proposals for building the jail previously reported will be received until August 1 by the clerk of the board of supervisors of Lowndes county.

Duck Hill.—B. F. Reeves and Wall & Holmes have each purchased machinery for a saw mill.

Natchez.—Electric light machinery will be placed in the Natchez Cotton Mills.

Vicksburg.—The Louisville, New Orleans & Texas Railroad Co. (office, Memphis, Tenn.) contemplate building a freight depot.

NORTH CAROLINA.

Asheville.—The Asheville Ice & Coal Co. will erect an ice factory.

Asheville.—Otis A. Miller, of Knoxville, Tenn., will build a hotel about 8 miles from Asheville.

Aurora.—F. F. Cherry is erecting a grist mill and gin at Aurora, and not at Pamlico, as lately stated. He contemplates adding a saw mill next winter.

Cane Creek.—A flour mill has been erected by Joseph Garren.

Charlotte.—Moyer & Hirshinger have recently started the manufacturing of pants.

Greensboro.—There is talk of a company being formed to start a cotton factory.

Greensboro.—S. S. Brown and others are trying to organize a \$20,000 stock company to build the roller flour mill referred to last week.

Lentz.—A new saw mill has been erected by J. A. Fisher.

Lincolnton.—R. F. Hoke, of Raleigh, and others will build a hotel at the Lincoln Lithia Springs.

Madison.—The money has been raised to secure the building of a branch of the Cape Fear & Yadkin Valley Railroad, (office, Fayetteville,) from Stockdale to Madison.

New Berne.—E. H. Meadows and J. A. Meadows have formed the Meadows Fertilizer Co., to manufacture fertilizers.

Raleigh.—The Southern Printing Co. has, it is stated, been formed, with H. G. Coyte as manager. The capital stock is said to be \$60,000.

Stanly County.—It is reported that the Stanly Freehold Mines, Limited, will shortly begin developing mines in Stanly county.

Statesville.—The building reported last week as being erected by H. M. Mills will be used as a furniture factory if a company can be organized for that purpose.

Thomasville.—E. M. Caldcleugh & Bro., of Greensboro, are developing a gold mine near Thomasville.

Wilmington.—The Wilmington Cotton Mills are building a two-story dye-house, 30x65 feet. The second story is to be used as a finishing room for cheviots, etc.

Wilmington.—Morton & Hall are enlarging their cooperage factory to double the present capacity.

Wilson.—The Wilmington & Weldon Railroad Co. (office, Wilmington,) have purchased ground on which to erect a cotton compress.

SOUTH CAROLINA.

Charleston.—E. Willis, Henry E. Young, M. Connell and E. R. White, of Charleston; T. W. Woodward, of Rockton, and L. A. Ransom, of Columbia, have incorporated the Southern Improvement Co., capital stock \$50,000, to buy and sell land, engage in mining and manufacturing, &c.

Chester.—A subscription of \$25,000 has been voted to the Georgia, Carolina & Northern Railroad.

Greenville.—R. R. Asbury & Son will add a Brush electric light plant to their gas works.

Newberry.—W. T. Davis & Co. have lately put their sash, door and blind factory in operation.

Pelzer.—The Pelzer Manufacturing Co. will rebuild their cotton warehouse lately burned.

Sumter.—Bids are invited for building water works.

Sumter.—The Eutawville Railroad Co. will build their machine shops at Sumter.

TENNESSEE.

Amnicola.—The Cincinnati Southern Railroad Co. (office, Cincinnati, O.) will build a branch railroad from Amnicola to the mouth of Chickamauga creek, 2 miles.

Athens.—The Athens Furniture Works have been purchased and will be enlarged by Messrs. Thurston and Markley.

Athens.—The Athens Mining & Manufacturing Co. have decided to begin work at once on the several factories previously reported as to be built by them.

Brighton.—A saw mill and a flour mill will be started soon. J. S. Hill can give information.

Bristol.—Additional machinery has been put in the Bristol Woolen Mills.

Bristol.—H. H. Carson, of Boston, Mass., is organizing a company to erect an electric light plant.

Bristol.—J. M. Crowell contemplates building an opera house this fall.

Bristol.—W. R. Duncklee, of Cleveland, O., and others contemplate building a hotel to cost about \$50,000. C. E. Finch, Bristol, can give particulars.

Bristol.—John Eakles has erected a saw mill.

Caryville.—J. S. Bonham is forming a company to develop oil and gas lands in East Tennessee.

Chattanooga.—The Chattanooga Electric Light Co. have purchased the machinery for their incandescent plant, previously reported.

Chattanooga.—R. L. Bright, T. E. McCrosky, A. S. Thomas, J. L. Clift and J. D. Bright have incorporated the Tellico Rail-

road Co., to build a railroad from the North Carolina State line to Nashville or Emory Gap.

Chattanooga.—John A. Hart, C. A. Lyerly M. H. Clift, T. G. Montague and others have chartered a \$15,000 stock company to prospect for oil and gas.

Clarksville.—H. C. Merritt, John F. House, William Daniel, A. G. Goodlet and others are organizing a company to prospect for natural gas. The capital stock will be about \$5,000.

Clinton.—The Big Valley & Clinton Railroad Co. has been chartered to build a railroad from Clinton to Kyles Ford. The incorporators are J. S. Ross, D. K. Young, C. J. Sawyer, D. R. Coward and Henry Clear, Jr., of Clinton; R. S. Payne and J. M. Thornburg, of Knoxville, and J. O. Lumsden, of Michigan.

Coker Creek.—The Henegan & Ross gold mine property has been conditionally purchased by parties who are erecting machinery to test the ores. F. L. Reed can probably give information.

Franklin.—J. A. Hardaway has purchased large new boilers and engine for his planing mill.

Knoxville.—Peyton Carter has purchased machinery to quarry and crush macadam.

Knoxville.—It is reported that the capacity of several manufactories will be doubled as soon as the subscription is voted to the Knoxville Southern Railroad and the Powell's Valley Railroad.

Morristown.—J. M. Boynton will, it is stated, build a furniture factory.

Mossy Creek.—L. D. Saunders will erect a 30-barrel flour mill. Has purchased machinery.

Mossy Creek.—Samuel N. Fain will erect a creamery.

Newmarket.—Messrs. McKinney and Russell, of Mossy Creek, and others have leased zinc lands and will develop.

Paris Landing.—The saw mill, shingle mill and stave and heading factory of A. J. Weldon, lately reported as burned, will probably be rebuilt.

Telford.—J. S. Lingensfelter has purchased machinery to erect a roller flour mill with a daily capacity of 30 barrels.

Toulon.—A saw mill is being erected by Millener & McColpin.

TEXAS.

Belton.—Benjamin D. Lee will erect the roller flour mill lately reported.

Celeste.—The Farmers' Alliance will build a ginnery.

Corsicana.—S. W. Warner has received the contract to erect a school building. It will cost \$7,642.45.

Columbia.—A. S. Rowen, L. H. Marble, Hugh Stewart and W. H. Marble have chartered the International Lumber Co., capital stock \$20,000.

Dallas.—The Texas & Pacific Railroad Co. will spend about \$50,000 in sinking artesian wells at Sherman, Paris, Honey Grove, Fort Worth, Bonham and other points in Texas.

Dallas.—F. H. Marsalis is president; Thomas Field, vice-president; Frank Field, secretary, and J. T. Elliott, treasurer, of the Oak Cliff Water Supply Co., lately reported as chartered. Are now building works.

Fort Worth.—The Denver, Russell Springs & Southeastern Railroad Co. has been chartered at McPherson, Kan., to build a railroad from Denver, Col., to some point in Texas, probably Fort Worth.

Fort Worth.—Additional pumping machinery and filtering machinery will be added to the Fort Worth Water Works at a cost of \$100,000. The mains will be extended.

Fort Worth.—The city council will issue bonds to build a city hall to cost \$20,000.

Fort Worth.—There are prospects of a paper mill being erected by Mr. Randolph, of Ohio.

Fort Worth.—W. F. Lake has ordered machinery to start a factory to extensively manufacture tinware and sheet iron ware.

Fort Worth.—The Fort Worth Granitic Roofing Co. has been chartered by Robert McColl, O. S. Kennedy and J. P. Smith. The capital stock is \$50,000.

Fort Worth.—M. Thuerkauf, of New Orleans, La., is prospecting with a view to establishing a boot and shoe factory.

Greenville.—A representative of the Edison Electric Light Co. is trying to organize a stock company to erect a plant.

Hubbard.—The Hubbard City Oil & Mining Co., capital stock \$250,000, has been incorporated by H. B. Allen, R. Oliver, S. W. Rugle, J. H. Onstatt, David Stern and A. J. Allen.

Marshall.—The Marshall Car Wheel & Foundry Co. contemplate adding a large machine shop about 60x100 feet.

New Braunsfels.—Joseph Landa will probably form a company to build water works.

Orange.—Lutcher & Moore will build a lumber railroad.

Plano.—Alexander Bros. contemplate erecting a grain elevator with a capacity of 100,000 bushels, but have not yet fully decided.

San Antonio.—The San Antonio Electric Light & Power Co., previously reported, will soon begin the erection of their buildings.

San Antonio.—Owen J. Cook has received the contract to build the addition to the Lone Star Brewery, previously reported.

Sherman.—The Sherman Iron Works have recently added to their plant a building 75x150 feet for manufacturing street cars.

Sherman.—Wandelohr & Finley are building a grain elevator.

Texas.—The Mexican Gulf Ship Channel Dock & Wharf Co., capital stock \$1,000,000, has been chartered by J. F. Caruthers, T. B. McCampbell, R. M. Staverton, J. J. Weldo, N. F. Vinyard, J. M. Brownson, R. E. Vinyard, S. E. Dunlap and others.

Trenton.—The Farmers' Roller Mill Co. has been chartered by W. A. Jackson, W. B. Foster, W. N. Stone, D. B. Saunders, W. C. Holmes and Julius Kaiser. The capital stock is \$30,000.

Tyler.—John Durst, T. R. Bonner, J. H. Bonner, C. T. Bonner, J. B. Douglass, H. M. Whitaker and R. Bergfield have incorporated the Long Leaf Lumber Co., capital stock \$100,000.

Waco.—The proposition of the San Antonio & Aransas Pass Railway Co. (office, San Antonio,) to build their railroad to Waco has been accepted. They will complete the road by April, 1888.

Yorktown.—It is reported that a ramie manufactory will be started. If true, Mr. Eichholz can give information.

VIRGINIA.

Bland C. H.—Work has been resumed at the Round Mountain iron ore beds.

Christianburg.—Mr. G. A. Van Fleet, of Colorado, and Messrs. Crozier, Cooper and Koiner, of Roanoke, have optioned 1,000 acres of gold lands in Montgomery and Floyd counties. They will erect machinery to develop the lands, and if results are satisfactory, will purchase the property.

Clarksville.—Messrs. Wright have received the contract to build a railroad from Clarksville to Oxford.

Fredericksburg.—The Goodwin gold mine in Spotsylvania county has been bought by Floyd B. Smith, of Baltimore, Md.

Front Royal.—Mr. Bolden, of Cedar Point, and Mr. Price contemplate opening an iron ore mine near Front Royal.

Harrisonburg.—A cigar factory has lately been started by Sibert & Van Pelt.

Jerusalem.—Proposals for sinking an artesian well will be received until August 1 by J. B. Prince.

Lynchburg.—The Lynchburg & Durham Railroad Co. have purchased 5 acres of land for depot purposes.

Martinsville.—Coal and iron ore lands are being leased for development.

New River Depot.—The Norfolk & Western Railroad Co. (office, Roanoke) contemplate changing the junction of their New River division with the main line. It will probably be changed to a point 2 miles west of New River Depot.

Norfolk.—The Norfolk & Western Railroad Co. (office, Roanoke) contemplate building at Lambert's Point 7 additional piers, a grain elevator with about 500,000 bushels capacity, and stock yards capable of accomodating 2,000 head of cattle and sheep.

Norfolk.—Northern parties have purchased a site at Lambert's Point for a furniture factory. Smith & Pannill, Norfolk, can give information.

Richmond.—A \$7,000 addition will be built to the Richmond College.

Richmond.—The Excelsior Electric Light & Power Co. will extend their plant.

Salem.—J. F. Chapman, of Salem, and J. Hotchkiss, of Staunton, have sold to Clarence H. Clark, of Philadelphia, Pa., about 650 acres of iron ore land along the Norfolk & Western Railroad near Clark's Summit.

Wytheville.—The Reed Island Iron Co., previously reported as incorporated, has been organized with R. C. Hoffman, of Baltimore, Md., as president, and John W. Robinson, secretary and treasurer. The object of the company is to mine iron ores, build furnaces, &c.

WEST VIRGINIA.

Charleston.—The name of the company reported last week as to bore several more gas wells near Charleston is the Pittsburgh-Kanawha Co. They state that they will lay pipes to Charleston.

Moundsville.—It is reported that several more gas wells will be sunk shortly. G. S. McFadden can probably give information.

Valley Falls.—Daniel Brittain, of Philadelphia, Pa., is purchasing largely of coal lands, and will, it is said, soon open mines and build a large number of coke ovens.

BURNED.

Ashland, Ky.—The saw mill of Mr. Mahan near Ashland.

Baltimore, Md.—The grain elevator of the C. A. Gambill Manufacturing Co. Will be rebuilt at once.

Baltimore, Md.—The Maryland Hominy & Coralline Co.'s mill on Buchanan's wharf; loss \$37,000.

Newport, Ark.—The lumber mill of William B. Empie & Co.; loss about \$4,000.

Sir John's Run, W. Va.—The flour mill of Mr. Mansell.

ATLANTA, GA., July 14, 1887.

Editor Manufacturers' Record:
I am thinking of starting a vinegar factory at Atlanta or Dalton, but have not fully decided.

W. R. STOKELY.

MACON, GA., July 17, 1887.

Editor Manufacturers' Record:
I am erecting a three-story brick building, which will cost from \$40,000 to \$50,000. Our city is growing rapidly.

J. DANNENBERG.

CARYVILLE, TENN., July 16, 1887.

Editor Manufacturers' Record:
I am forming a small syndicate for the purpose of developing oil and gas wells in East Tennessee. We are assured that we shall find oil and gas in large quantities.

J. S. BONHAM.

To Sink Artesian Wells.

MARSHALL, TEXAS, July 14, 1887.

Editor Manufacturers' Record:

We anticipate expending about \$50,000 in sinking artesian wells at Sherman, Paris, Honey Grove, Texarkana, Bonham, Fort Worth, Big Springs, Sierra Blanca, Eagle Flat, Berache, San Martine, Pyote, Metz and Vista. Of course, we may not sink wells at all these points, as something may occur in the geological formation which would show us it would be an useless experiment, but the intention of the Texas & Pacific Railroad Co. is to have a thorough and complete system of water supply on the entire line of their road.

WM. WINDHAM, Resident Engineer.

Natural Gas in West Virginia.

CHARLESTON, W. VA., July 14, 1887.

Editor Manufacturers' Record:

The Edwards Well No. 1 of the Pittsburgh-Kanawha Co., of which Mr. William S. Edwards is president, came in with gas on July 9. The company owns extensive territory in the great Kanawha region and exclusive franchise to the city of Charleston, and will bore more wells and pipe the city at once. This is the greatest gas field of the New South, and the only gas territory lying close to the great iron beds of the Virginias. The only gas on the continent lying close to iron ore, limestone, coal and coke.

A. L. A.

Will Build Large Warehouse.

OPELIKA, ALA., July 16, 1887.

Editor Manufacturers' Record:

We have already five large brick and stone cotton warehouses. Another will be built this summer, 175x200 feet, all brick. This warehouse is to be built by a stock company, known as the Merchants & Planters' Warehouse Co. The ground has been purchased at a cost of \$3,500, and material is being placed for building.

R. A. MITCHELL.

Water Works to be Enlarged.

FORT WORTH, TEXAS, July 15, 1887.

Editor Manufacturers' Record:

Our water works have been extended (the mains) 30,000 feet. A \$60,000 additional pump and a \$40,000 filtering machine have been agreed upon and will be placed in position soon; also further extensions demanded and will be placed in the near future.

H. S. BROILES.

Building Water Works.

DALLAS, TEXAS, July 12, 1887.

Editor Manufacturers' Record:

The Oak Cliff Water Supply Co. has been chartered with an authorized capital of \$50,000 and a subscribed capital of \$30,000. Water works are now building at Oak Cliff, a new suburb of Dallas. F. L. Marsalis, is president; Thos. Field, vice-president; J. T. Elliott, treasurer, and Frank Field, secretary.

F. L. MARSALIS.

Will Enlarge Plant.

AUGUSTA, GA., July 15, 1887.

Editor Manufacturers' Record:

A heavy increase was voted at our annual meeting on 7th inst., and we are arranging to double our arcs and add 1,200 incandescents.

AMERICAN ILLUMINATING CO.

A 40-Ton Ice Factory.

BIRMINGHAM, ALA., July 14, 1887.

Editor Manufacturers' Record:

We have formed the Alabama Ice & Cold Storage Co., with \$80,000 capital paid up. We use the Harrisburg ice machine, having a capacity of 40 tons daily. Our capacity for cold storage is 40 cars per day over capacity of ice.

J. M. RUTHERFORD, Gen'l Man.

Manufacturing Street Cars.

SHERMAN, TEXAS, July 13, 1887.

Editor Manufacturers' Record:

I have added to my works a building 75x150 feet and fitted same with full line of street car machinery and am now turning out two finished cars per week. I make the wheels, axles and everything about them. I have orders ahead for 18, mostly summer cars. I work 16 moulderers on iron house fronts and am very full of orders and have increased my force to 84 hands. Wandelohr & Finley are building a large grain elevator near my works. We have just secured free mail delivery. The St. Louis, Arkansas & Texas Railroad will reach here this week. They are building a very fine large brick passenger depot. Messrs. Connor and associates have just completed a fine system of water works for the city. The new Binkley hotel, a three-story brick, 100x150 feet, will be ready for occupancy September 1. It cost \$55,000. Our three large roller process flour mills are now running night and day on new wheat. The electric light works are in full operation. The streets and principal buildings are using it. This place is on quite a boom.

Z. P. DERRICK,

A Broom Factory.

MONTGOMERY, ALA., July 13, 1887.

Editor Manufacturers' Record:

I have opened a broom factory—Excelsior Broom Manufacturing Co.—and turn out from 60 to 75 dozen brooms per day, thereby furnishing Montgomery and neighboring towns.

ALBERT GIMBEL.

Enlarging Electric Light Plant.

CHATTANOOGA, TENN., July 18, 1887.

Editor Manufacturers' Record:

We are putting in Westinghouse 650 incandescent plant.

BRUSH ELECTRIC LIGHT CO.

Roller Flour Mill.

BELTON, TEXAS, July 15, 1887.

Editor Manufacturers' Record:

A roller flour mill will be built by Ben. D. Lee.

H. TATUM.

Will Enlarge Plant.

RICHMOND, VA., July 19, 1887.

Editor Manufacturers' Record:

We intend to extend our plant.

EXCELSIOR ELEC. LIGHT & POWER CO.

CEDAR KEY, FLA., July 14, 1887.

Editor Manufacturers' Record:

A Pennsylvania company proposes erecting an ice factory here at an early date, and will use sea water exclusively for making ice and salt. A concrete foundation is being built, on which to erect a very handsome Methodist church; the cost will be about \$1,500. The Eagle Pencil Co. are now putting into their extensive pencil factory at this place a complete system of the Walworth link sprinklers. The large Duplex pump is in position and steam and water connections made. The company will make extensive additions to the system, consisting of water mains, fire plugs, and perforated roof pipes. The Suwanee & Gulf Railroad will be extended to a connection with the South Georgia & Florida Air Line. P. W. F.

SUFFOLK, VA., July 14, 1887.

Editor Manufacturers' Record:

The Suffolk Manufacturing Co. are making several improvements in their mills by putting in new machinery, re-arranging it for convenience and saving of power, &c. We did, a short time ago, put in a new first-class lappet drawing frames, &c., and when we get in all that we propose to put in we think will have a complete mill.

SUFFOLK MANUFACTURING CO.

STONEWALL, N. C., July 12, 1887.

Editor Manufacturers' Record:

I am now erecting a 25 horse-power mill. Will run about 120 gin saws and one very heavy grist mill, and during the winter and next spring will add a saw mill of 10 to 12 M capacity. The above will be in Aurora. I shall also move my mercantile business there.

F. F. CHERRY.

Flour Mills Improved.

SHERMAN, TEXAS, July 11, 1887.

Editor Manufacturers' Record:

Our capacity is now 175 to 200 brls. in 24 hours. Improvements amount to about \$7,000.

EAGLE MILLS.

BALTIMORE, MD., July 19, 1887.

Editor Manufacturers' Record:

We have the contract to build a four-story brick warehouse at 424 (new No.) E. Baltimore street for the H. R. Eisenbrandt estate, with brick, stone and copper front, as per plans of J. C. Gott, Esq., architect.

C. F. ANDREAS & CO.

KNOXVILLE, TENN., July 14, 1887.

Editor Manufacturers' Record:

I have bought machinery for quarrying and crushing macadam. PEYTON CARTER.

Car Works for Gadsden—Rolling Mill Wanted.

GADSDEN, ALA., July 18, 1887.

Editor Manufacturers' Record:

Our city is growing right along, notwithstanding the heated term. The Gadsden Car Manufacturing Co. broke dirt this morning for their plant. Our company gave them 10 acres of land and \$100,000 as subsidy. The works are located immediately on the line of the T. & C. R. R. and Rome & Decatur, both roads running switches into the car company's property. This is a valuable acquisition to our city and will give us 200 skilled mechanics, which secures an additional population of 1,000 souls. This class of mechanics gets good wages and will be able to live in good houses and to patronize merchants, schools and churches. One establishment like this is worth to our city half-dozen furnaces. This company will get all their material on the spot. They have contracted with the Kyle Lumber Co. for 1,000,000 feet of car material, and with the Round Mountain Iron Works for one year's supply of the celebrated Round Mountain charcoal car-wheel iron. The saving of freight alone to this company over any company located north of the Ohio river will be over \$50 per car, to say nothing of the advantage of saving in wheelage on all cars manufactured for Southern roads—10 cents a mile, or nearly \$50 a car on all cars delivered to roads south of Chattanooga. We now want a small merchant rolling mill, and liberal aid will be given to any company establishing such an enterprise in our city.

THE GADSDEN LAND & IMP. CO.,
M. L. FOSTER, Sec'y and Treas.**Saw Mills.**

ATLANTA, GA., July 16, 1887.

Editor Manufacturers' Record:

Messrs. Wall & Holmes, Duck Hill, Miss., have purchased of Russell & Co. one saw mill. Mr. B. F. Reves, Duck Hill, Miss., has also purchased a saw mill of Russell & Co.

J. W. DUNN.

FLORENCE, ALA., July 14, 1887.

Editor Manufacturers' Record:

The foundation for the laundry building is now being laid in stone by Thos. Hollingsworth. The proprietor is Charles Revelle. Mr. Russell is also in town for the purpose of locating a wood-working factory for making butter dishes, berry and fruit boxes, &c. All arrangements have been effected and he will go to work at once upon the building. This is the only one of the kind south of the Ohio river.

WAVE PUBLISHING CO.

GREENVILLE, MISS., July 17, 1887.

Editor Manufacturers' Record:

I have built a large gin house, and, in addition to the ginning business, I contemplate putting in a corn meal and feed mill. I have engine power and room for it in the building, and have been corresponding with manufacturers for the machinery. May not start it before next January.

J. A. DEATON.

Erecting Saw Mill.

TOULON, TENN., July 7, 1887.

Editor Manufacturers' Record:

A very fine saw mill is being erected near here by Millener & McColpin.

P. H. ANDERSON.

CHARLESTON, S. C., July 15, 1887.

Editor Manufacturers' Record:

We expect to start a brewery at Savannah, Ga.

CRAMER & KERSTEN.

MARYVILLE, TENN., July 13, 1887.

Editor Manufacturers' Record:

I am putting up a new house for my old planing machinery. It is 40x60 feet, two story, of brick.

D. JONES.

Georgia Mining Notes.

CANTON, GA., July 13, 1887.

Editor Manufacturers' Record:

The Micor gold mine is supplied with a ten-stamp mill for reducing the ore, but the mine is deficient in other appliances for economizing labor and reducing expenses, such as a tramway and a suitable engine at mill. The mine is a low grade one, but with an abundance of ore that runs from \$2 to \$4 per ton with great uniformity.

The parties owning the green marble or verd antique beds near Holly Springs are clearing off the ground to put up the hoisting derrick, and to put in other machinery necessary to such a plant. This is said to be a large deposit of very fine marble.

Wm. M. McVandlers has just completed a 5-stamp mill and put in an engine this week to work his gold mine 3 miles from Canton. This has the merited reputation of being a high grade gold mine.

I have recently discovered a large vein of chromium, that according to my opinion, will yield sesqui-oxide of chromium in quantity sufficient to justify further investigation and purchase for working the same. I want to get a trustworthy, practical man of means to assist me in securing the property and making the developments needed for sale or work, all of which can be done on reasonable terms.

J. O. ROBERTSON.

New Factories Being Established.

MONTGOMERY, ALA., July 16, 1887.

Editor Manufacturers' Record:

A bucket and barrel factory will be established at Riverside to make all kinds of wooden-ware. A spoke and handle factory, capital \$25,000, will also be located there. The vinegar and cider works, heretofore spoken of, commence to build this week a four-story brick building, 40x130 feet. These enterprises will be located at Riverside, which is the name that has been given our beautiful manufacturing town just north of the city. The chemical works and the cotton oil mills are nearing completion.

W. L. CHAMBERS.

Brewing Machinery Wanted.

NEW ORLEANS, LA., July 12, 1887.

Editor Manufacturers' Record:

I want the address of some responsible manufacturers of brewing machinery.

H. DA PONTE, 28 Carondelet street.

Will Build Vinegar and Cider Works.

MONTGOMERY, ALA., July 16, 1887.

Editor Manufacturers' Record:

We have organized vinegar and cider works at Riverside Park on suburbs of this city. Style of organization is Friedman Vinegar & Cider Works. We propose erecting buildings immediately, thus beginning operations by October 1. The capital is sufficient for all purposes, and our stockholders are among our most prominent business men. The capital stock is \$37,500.

JNO. W. DURR, JR., Pres.

Opening Coal Mines.

TAZEWELL C. H., VA., July 14, 1887.

Editor Manufacturers' Record:

Mr. White and ourselves are engaged now in opening coal veins along the line of the Clinch Valley extension of the N. & W. R. R., and have a tract of 2,500 acres of land upon which we have opened a 10-foot vein, a 6-foot, a 5-foot, and a 6 foot 8-inch vein.

B. W. & J. STRAS.

ROCKFORD, ALA., July 15, 1887.

Editor Manufacturers' Record:

I expect to build a hotel, double story, at the Hot Well near Clanton, by the 1st of October, 1887.

A. J. MASSEY.

Will Build New Gas Works.

LOUISVILLE, KY., July 14, 1887.

Editor Manufacturers' Record:

H. D. Fitch and associates have bought the Owensboro Gas Works, and will build new works and lay a large amount of new pipe.

N. S. W.

Building a Large Hotel.

DECATUR, ALA., July 11, 1887.

Editor Manufacturers' Record:

The Decatur Land, Improvement & Furnace Co. have broken ground for a \$300,000 hotel. It will be rapidly pushed to completion.

H. G. BOND, Gen'l Manager.

To Manufacture Gas Machines.

BIRMINGHAM, ALA., July 11, 1887.

Editor Manufacturers' Record:

The Alabama Automatic Water Gas Co. was organized here July 6, capital \$250,000. Fred Sloss is president; J. E. Du Bois, vice-president, and H. M. McNutt, secretary and treasurer. Will manufacture machines in Birmingham. We have the patent right to the State.

H. M. MCNUTT.

New Machinery.

CREIGHTON, GA., July 8, 1887.

Editor Manufacturers' Record:

We are enlarging and extending our mining operations, and have recently fitted up a new mine with new machinery, and are successfully operating it. We are making brick for houses, etc.

FRANKLIN & McDONALD MINING CO.

Building New Varnish Works.

LOUISVILLE, KY., July 18, 1887.

Editor Manufacturers' Record:

On July 9th we broke ground for our new varnish works corner 14th and Maple streets, this city. All railroads entering Louisville pass our door, and a switch enters our yard. Improvements will be brick and iron, quite plain but convenient, to cost \$8,000 or \$10,000, with ample room for extensions. Our business is excellent.

FALLS CITY VARNISH CO.

Will Erect Electric Light Plant.

GREENVILLE, S. C., July 18, 1887.

Editor Manufacturers' Record:

The gas company here will put in a plant of 60 arc light capacity, using the Brush system.

W. A. WRIGHT.

To Build a Cigar Factory.

KEY WEST, FLA., July 10, 1887.

Editor Manufacturers' Record:

Will start the building of my cigar factory to accommodate from 150 men and upwards, and some 25 cottages to rent to my operators.

JOSE TOLEDO.

SHEFFIELD, ALA., July 13, 1887.

Editor Manufacturers' Record:

We have a contract to build 40 houses and are the lowest bidders on 50 more. We have working force of about 50 men.

J. B. COLEMAN.

CHARLOTTE, N. C., July 13, 1887.

Editor Manufacturers' Record:

The entire contract for the machinery of the Piedmont Milling Company has been awarded to the D. A. Tompkins Company, and Liddell & Co., of this city.

J. W. MILLER.

RALEIGH, N. C., July 16, 1887.

Editor Manufacturers' Record:

A hotel will be built at the Lincoln Lithia Springs.

B. F. HOKE.

A Progressive Arkansas Town.*[Special correspondence MANUFACTURERS' RECORD.]*

FORT SMITH, ARK., July 15, 1887.

A syndicate which I represent contemplate building a line of street railway about 2½ miles in length, and a survey of the route is now being made. It is possible that we may build for a longer distance, and, if so, will probably put in a steam or electric motor. I intend going East as soon as surveys are made for the purpose of making contracts, etc., for material.

This city is in a most flourishing condition. Over \$6,000,000 worth of property, as the records show, have changed hands here since January 1, 1887. The population from 1880, when it was 3,000, has grown to be over 16,000 now. Several lines of new railways are projected, and two are now in course of construction, viz: The Missouri Pacific south to connect with the Iron Mountain, so as to form a through line to the seaboard, and the Kansas & Arkansas Valley road west to connect us with Kansas and the Western grain fields. A party of engineers surveying a route for the Kansas City, Fort Scott & Gulf road reached here yesterday. Several roads are projected and work on the Fort Smith, Paris & Dardanelle road will begin about September 1. The Frisco line (extension) to Paris, Texas, was completed about a month ago, and already nearly a hundred car-loads of coal are being shipped daily from our coal fields.

A number of new factories have recently been established here, but we need many more and of all kinds. The building permits issued by the city during the past 60 days amount to over \$600,000.

GEO. TILLES.

BRISTOL, TENN., July 13, 1887.

Editor Manufacturers' Record:

I have erected a wood mill on Beaver creek in Bristol, Va., at the termini of the South Atlantic & Ohio, Norfolk & Western and East Tennessee, Virginia & Georgia railroads; capacity 15 to 25 cords per day. Will increase power if the business pays.

JOHN EAKLES.

Brick Works to be Started.

SELMA, ALA., July 15, 1887.

Editor Manufacturers' Record:

Another steam brick-yard will start here next week.

EDWARD G. GREGORY.

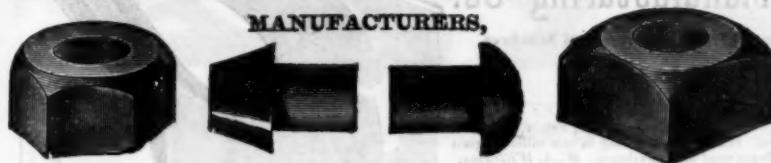
LITTLE & CHIPMAN, Rosewood, Fla., contemplate building a mill to saw cedar, and desire to correspond with parties using cedar wood in any form.

Car Works for Gadsden.

In our letter from Gadsden it is stated that work has been commenced on new car works to employ 200 hands. The company has already contracted for 1,000,000 feet of lumber and for a year's supply of car-wheel iron. It is stated that the saving in freight alone to this company over any company located north of the Ohio river will be over \$50 a car, in addition to a saving of about the same amount in wheelage on all cars manufactured in the North for roads south of Chattanooga. Under these circumstances, it can readily be seen what a tremendous advantage these works, as well as other Southern car factories, have in competition with Northern works. Gadsden is to be congratulated upon this fine enterprise. This town is fast adding new industries, and is ready to extend liberal encouragement to all who desire to locate there.

HOOPES & TOWNSEND,

MANUFACTURERS,



KEYSTONE BOILER RIVETS,

Cold Punched, Chamfered, Trimmed and Drilled Square and Hexagon Nuts.

Finished and Case-Hardened Steel Hexagon Nuts.

BRIDGE RODS and RIVETS.

Builders' IRON Work.
TANK and COOPERS' RIVETS.

PHILADELPHIA, PA.

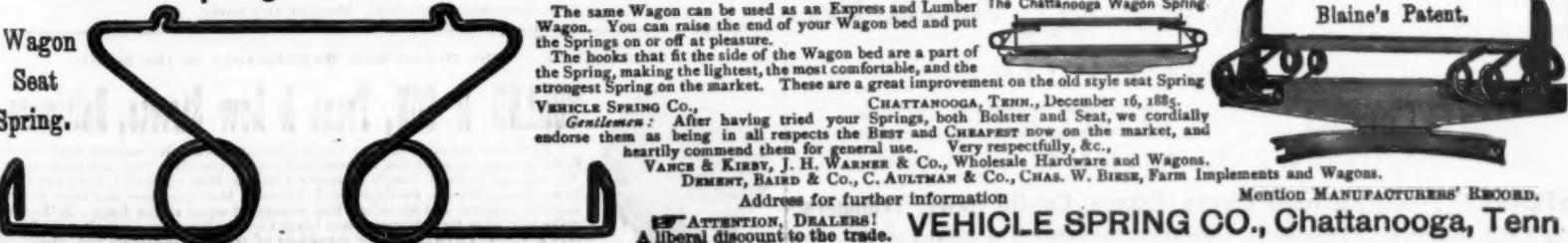
The WARFIELD MFG. Co.
336, 338, 340, 342 North Street, BALTIMORE, MD.
Manufacturers of SPECIAL MACHINERY,
Steam Engines, Shafting, Hangers, Pulleys, Couplings, Etc., Etc.
Sole Manufacturers of Warfield's Green Corn Cutter,
Sole Manufacturers of For Cutting Green Corn from the Cob or Canning.
The Most Complete Line of Patented Machinery for Fruit, Vegetable
and Oyster Packers' use in the United States, and the Largest Manufacturers
of the same.
CATALOGUE UPON APPLICATION.

R. SWORMSTEDT & CO.
Mill Builders
Mill Furnishings
All MACHINERY sold at Manufacturers' Price, and fully guaranteed as represented.
Office and Shops, 603 N. Calvert St.
BALTIMORE.

The BEST CORN MILL
IN AMERICA!
It is a broad assertion, and we mean just what it implies, and nothing short of it. It will make better meal, grind faster, hold the dress longer, and in every way the best proportioned and best looking mill on the market.
MILLSTONES for all purposes, and at prices that fully meet sharpest competition.
FLOUR MILLS—Portable and Stationary outfit complete for \$500.
The Simplest WATER WHEEL on the market.
The Most Perfect SAW MILL, Simple, and pronounced by all The Best.
SHAFTING and GEARING of All Kinds.
Be sure to send for Circulars and Prices before buying.
A. A. De LOACH & BRO.
Founders and Machinists. ATLANTA, GA.

Vehicle Spring Co., MANUFACTURERS PAT. WAGON SPRINGS & WAGON SEAT SPRINGS, CHATTANOOGA, TENN.

Wagon
Seat
Spring.



PATENT FOOT POWER MACHINERY.

THE LATEST AND MOST IMPROVED.

Scroll Saws, Circular Saws, Mortisers, Lathes, &c.

THE EMPIRE SCROLL SAW.

Cuts 3 in. Thick, Swings 24 in. Has Upright Drill, Tilting Table, Powerful Treadle Motion, Cuts Rapid, and is Easy to Operate.

PRICE, complete, \$25. Without Drill, \$20.

This Machine will pay for itself in a short time—read the following:

JACKSON & LAW, Carpenters and Contractors, BEAVER FALLS, PA., write: We are well pleased with the Empire Scroll Saw. We made a test of its capacity when we had it "on trial," in cutting Brackets from a inch pine plank, and earned \$4.25 in 6 hours, after deducting the cost of material, computing at the price we would have to pay at the Planing Mill for the same brackets.

Machines sent on Trial. Catalogue Free.

SENECA FALLS MFG. CO., 642 Water St., SENECA FALLS, N. Y.

THE MIDVALE STEEL CO.

TIRES and AXLES

OF EVERY DESCRIPTION.



CRUCIBLE AND OPEN HEARTH STEEL.

Works & Main Office:
Westtown, Philadelphia, Pa.

BRANCH OFFICE
322 Walnut St., Philadelphia, Pa.

CLEVELAND WHEEL AND FOUNDRY WORKS.

MAHER & BRAYTON, Proprietors.

MANUFACTURERS OF—

Car, Engine, Truck and Tender Wheels, Machinery, Railroad and Rolling Castings.
Also, CHILLED IRON RAILROAD FROGS, (Any Angle),
AND STREET RAILROAD TURNOUTS.

Office, No. 20 Carter St., - - - CLEVELAND, O.



The BEST OF THEIR KIND.

French Burr Portable Mills.
For grinding Stock Feed and Fine Meal for
family use.

Five Points of Superiority Found in Our Mills.

1st. Great Strength and Durability.
2d. Simplicity of Construction, requiring less attention by reason of few adjustments.

3d. Reliable at all times.

4th. Most effectual in their work, the Table
meal being of highest character.

5th. Low price.

If you are in need of a mill it will
pay you to send for catalogue and prices.

SINKER, DAVIS & CO.

Portable Mill Factory. INDIANAPOLIS, IND.

Look Carefully through this paper and you may find an advertisement of some machinery or other goods that you are in need of. Preserve this copy for future reference.

The same Wagon can be used as an Express and Lumber Wagon. You can raise the end of your Wagon bed and put the Springs on or off at pleasure.

The hooks that fit the side of the Wagon bed are a part of the Spring, making the lightest, the most comfortable, and the strongest Spring on the market. These are a great improvement on the old style seat Spring.

VEHICLE SPRING CO., CHATTANOOGA, TENN., December 16, 1885.

Gentlemen: After having tried your Springs, both Bolster and Seat, we cordially endorse them as being in all respects the BEST and CHEAPEST now on the market, and heartily commend them for general use.

VANCE & KIRBY, J. H. WARNER & CO., Wholesale Hardware and Wagons.

DEMENT, HAIRD & CO., C. AULTMAN & CO., CHARLES W. BIRK, Farm Implements and Wagons.

Address for further information.

ATTENTION, DEALERS! A liberal discount to the trade.

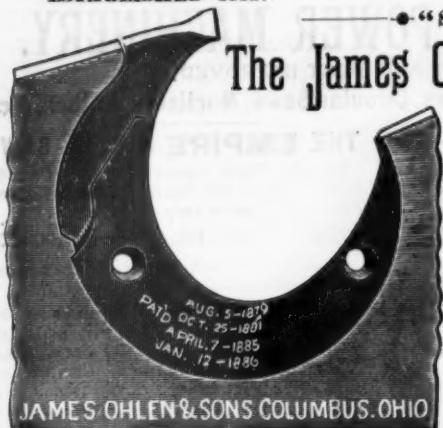
Mention MANUFACTURERS' RECORD.

VEHICLE SPRING CO., Chattanooga, Tenn.

ESTABLISHED 1852.

CAPITAL STOCK \$125,000.00.

INCORPORATED 1848.



JAMES OHLEN & SONS COLUMBUS, OHIO.

The James Ohlen & Sons Saw Manufacturing Co.

Standard, Solid and Inserted Tooth Saws, Mill, Muley, Gang, Drag, Cross-Cut and Band Saws.

COLUMBUS, OHIO.

WHAT PEOPLE SAY:

GAINESVILLE, VA., Feb. 1, 1887.
I am running one of your Chisel-Tooth Saws. Have been working in saw mills for past five years, but never found a saw equal to yours. Please send me a catalogue. W. A. Williams.

Wise & Nelson, Jonesboro, Ind., Feb. 1, 1887, write: "The 64-in. gauge solid saw is doing splendid work; inclosed find draft for same. Make and ship us to gauge, same hand as other, soon as possible."

B. R. Edwards, Jacksonville, Fla., writes: "Saw received. Has been running steadily and not made one bad line. Draft inclosed."

The Above Cuts Show Our Champion Chisel-Tooth Saw.

It has been thoroughly tested on steam and friction feed, in all kinds of timber, and we guarantee to our patrons perfect satisfaction in every respect. Each set of teeth will cut from 100,000 to 250,000 feet. We advertise only practical possibilities, and stand by what we say, and guarantee that any saw bearing our trade mark (James Ohlen & Sons) are equal, if not superior, to any others in every respect, and will give satisfaction to those using them.

Write for Catalogue and mention this paper.



JAMES OHLEN & SONS COLUMBUS, OHIO.

Economist Planer and Matcher.

00
300
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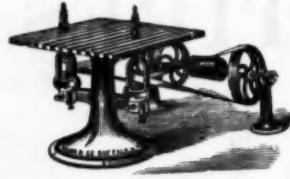
FRANK & CO.

Manufacturers and Dealers in

MACHINERY

FOR

Planing,
Matching,
Moulding,
Tenoning,
Mortising,
Boring,
Shaping,
Carving, Etc.



176 Terrace St., Buffalo, N. Y.

A FULL LINE OF

Wood-Working Machinery,

Designed Expressly for

SOUTHERN TRADE.

SPECIAL DESIGNS IN

Re-saws, Planing Machines, Jointers, Band-Saws, Etc.

Send for Catalogue and Prices before purchasing elsewhere. Mention this Paper.

SNIGGS & CO., - - Buffalo, N. Y.

The Barnes Water Emery TOOL GRINDER



IT HAS NO PUMPS; NO VALVES.

No piping to supply it with water.

IT HAS NOTHING TO GET OUT OF ORDER; IS ALWAYS READY FOR USE.

It is as easily managed as a grindstone and will give vastly better results. It will be sold subject to approval.

Send for description and price.

W. F. & JOHN BARNES CO.
Address, No. 221 Ruby St., Rockford, Ill.

PATENT
Wood-Working * Machinery

Of the Latest and most Improved Designs for
Planing Mills, Furniture Factories, Chair
Factories, Car and Agricultural Works,
Carriage and Buggy Shops and

GENERAL WOOD WORKERS,

MANUFACTURED BY

THE EGAN CO.

(Successors to the Cordesman & Egan Co.)

228 to 240 W. Front St. Cincinnati O., U. S. A.
Thos. P. Egan, Pres. Ed. Ruthven, Sec. F. Danner, Sup.

STEARNS MNFG. CO., ERIE, PA.

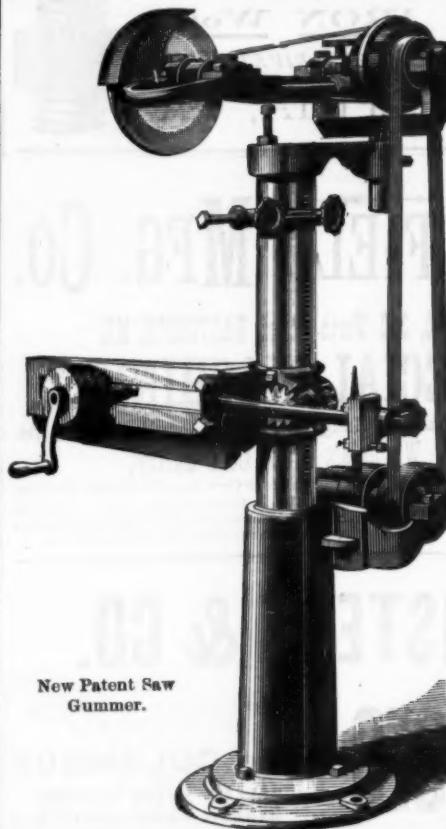
Capacity 15,000 to 450,000 feet per day. CIRCULAR SAW MILLS Complete outfits planned and furnished.

ENGINES, 15 to 800 Horse-Power. BOILERS OF IRON OR STEEL.

BAND SAW MILLS, with Friction or Steam Feed.

STEARNS' Fractional Head Blocks, Edgers, Cut-Off Saws, Trimmers.

The Wilkin Pony Gang. No foundation. Capacity 30,000 to 40,000 feet of Flooring per day. The Wilkin Heavy Gang Saw Mill for large mills. Lath and Picket Mills, Bolters, Conveyors, etc.



New Patent Saw Gummer.

Saw Mill
* Machinery, *
ENGINES AND BOILERS.

Our New Patent

SAW GUMMER

Cannot be Surpassed

AND IS

SUPERIOR

To any in the market.

We solicit correspondence. Write for prices.

VARIETY IRON WORKS,
Jerome Moltz, Prop.
WILLIAMSPORT, PA.

CORDESMAN, MEYER & CO.

171 and 173 West Second Street, CINCINNATI, OHIO.

FINE GRADES OF LATEST

Wood Working Machinery

OF EVERY DESCRIPTION.

Planing Mills, Furniture and Chair Factories,
Carriage, Wagon and Agricultural Works.
Write for our latest Catalogue and Price List. Correspondence solicited.

E. & B. HOLMES,
BUFFALO, N. Y.
MANUFACTURERS OF
BARREL
MACHINERY.

Chamfering, Howeling and Crozing Machines, Stave Dressers, Stave Jointers, Hoop Drivers, Crozing Machines, Heading Jointers, Heading Dressers, Beer Stave Binders, Stave Cutters, Leveling and Trussing Machines, Cylinder Stave Saws, Heading Saws, etc.

STAVE, BARREL, KEG AND HOGSHEAD MACHINERY.—

Correspondence solicited. Mention this paper.

ESTABLISHED 1845. The Oldest Saw Manufactory in the South.

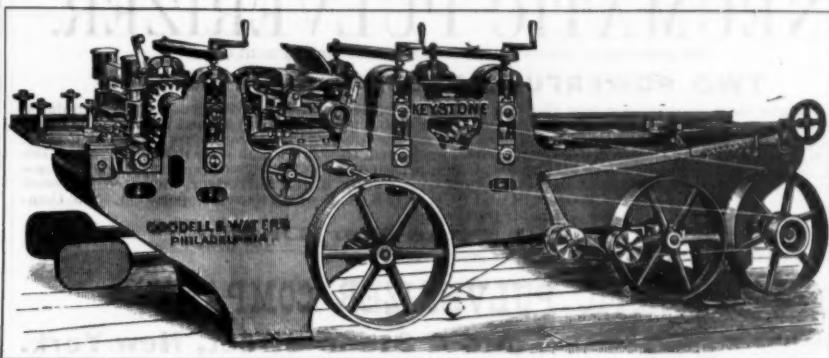


TOLAND & SON, Front & Low Streets, Baltimore.

Particular attention paid to Large Circular Work. We warrant our Circular Saws to stand more strain, without buckling or cracking, than any other make. We make all kinds of Tough-Tempered Circular, Mill, Cross-Cut, Band and Drag Saws, Planer Knives, Ensilage, Feed, Tobacco, Meat Choppers, and other Knives made to pattern, and Moulding Bits warranted equal to the Best. N. B.—We make no charge for hammering any Large Circular Saw that we can't make "go." GIVE US A TRIAL, and for toughness of temper, durability and quality of material, compare our work with the best you have ever used.

"KEYSTONE"

Rapid Feed Flooring Machine.



SEND FOR DESCRIPTIVE CIRCULAR AND PRICES.

GOODELL & WATERS, Manufacturers,

WESTERN WAREROOMS:

11 and 13 S. Canal Street,
CHICAGO, ILL.

MR. C. L. RICE, MANAGER.

3002 Chestnut Street,

PHILADELPHIA.

ESTABLISHED

POOLE & HUNT,

—1851—

Founders and Machinists.

**POOLE & HUNT'S
LEFFEL * TURBINE. WATER * WHEEL,**

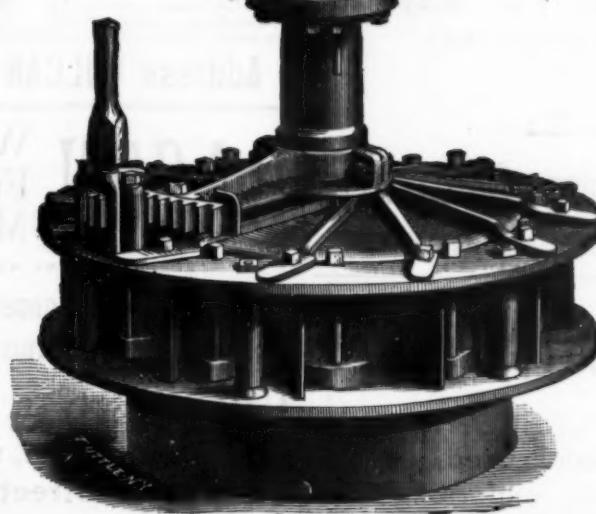
Prices as Low as any

other First-Class Wheel.

Machine-Moulded

MILL GEARING.

Our plant for the production of MACHINE-MOULDED MILL GEARING is unequalled in the country, and we are prepared to fill orders with dispatch and at GREAT SAVING IN COST OF PATTERNS.



**Shafting, Pulleys,
HANGERS, PEDESTALS.**

SHAFTING, PULLEYS, HANGERS and COUPLINGS, of latest and most approved designs.

N. B.—Shipping facilities the best in all directions.

Send for Pamphlet. Send for Price-List.

List of our Gearings
Mailed on Application.

POOLE & HUNT, BALTIMORE, MD.

M ECKLENBURG IRON WORKS,

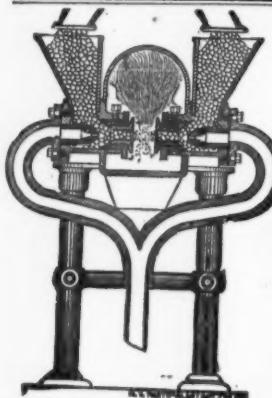
*Charlotte,
N. C.*

BUILDERS OF { ENGINES and BOILERS, STAMP MILLS,
CRUSHERS, Circular Saw and Grist Mills, CORNISH PUMPS,

MINING MACHINERY.

Cotton Presses, Water Wheels, Shafting and General Machinery.

JOHN WILKES, Manager.



Sectional View of Pulverizer.

PNEUMATIC PULVERIZER.

The principle of pulverization consists in the employment of

TWO POWERFUL OPPOSING CURRENTS

of dry super-heated steam, so arranged that they continuously charge themselves with crushed or granulated material, and by the great force and velocity of the steam currents the minerals are dashed against each other with such power of concussion as to cause the hardest ores to be pulverized to any degree of fineness desired. The high temperature of the super-heated steam currents employed, through which every minute particle of ore must pass, causes them to become very hot and dry, which produces a beneficial effect upon sulphurets and ores containing rusty Gold. The light weight and simplicity of construction of the Pulverizer, the extremely small and inexpensive wearing parts are the WONDER and SURPRISE of all who witness its operation. The Company are prepared to furnish complete plants for pulverizing

10 to 200 Tons Per Day,

including a Sectional Steam Boiler supplying all the power required.

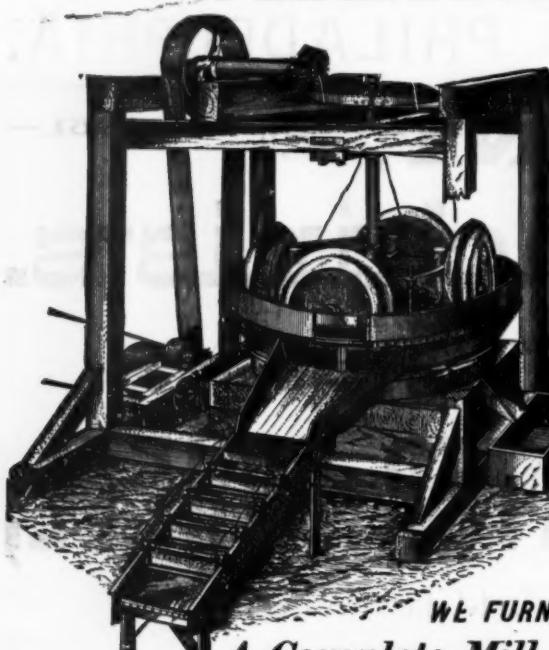
PNEUMATIC PULVERIZER COMPANY,

L. F. HOLMAN, Pres.
F. A. LUCKENBACH, Supt.
2 and 4 Stone Street, New York.
WRITE FOR PARTICULARS.



OSGOOD'S
\$50
SCALES
For \$35.00
We deliver on trial,
Fully warranted,
all metal parts for
U. S. Standard
2-Ton Wagon Scales.
\$15 covers cost of
timbers and work.
Larger sizes in pro-
portion.
Illustrated book FREE
OSGOOD & CO.
BOSTON & NEW YORK

WISWELL Ore Pulverizer and Amalgamator COMBINED.



The following testimonial from Mr. Marsden, of the firm of Farrel & Marsden, manufacturers of stone-breakers & ore-crushers, Ansonia, Conn., speaks volumes for the Wiswell Mill:

Wiswell Electric Mining Machinery Co.:

GENTLEMEN: After carefully inspecting your mill and seeing it in operation, I do not hesitate to say that it is one of the best, if not the best pulverizer and most complete gold saving machine I have ever seen.

Please accept congratulations for your success.

B. L. MARSDEN.

We FURNISH

A Complete Mill for \$2,500.

DELIVERED ON BOARD CARS.

For further information address

WISWELL

Electric Mining Machinery Company,

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4 Post-Office Square, Boston, Mass.

TO READERS OF ADVERTISEMENTS.

Readers of the MANUFACTURERS' RECORD who order any goods herein advertised, or ask for information concerning them, will oblige the publishers by stating that they saw the announcement in the columns of this paper.

M. C. BULLOCK MFG. Co.

MANUFACTURERS OF

Diamond Pointed Rock Drills,
STEAM ENGINES and BOILERS,

Land's Patent Band Friction Hoisting Machinery,

FOR MINES, BLAST FURNACES, DOCKS, ETC.

STRAIGHT LINE ENGINES.

Address,

GENERAL OFFICE: WORKS:
138 Jackson St., Phenix Building. Lake and Tallman Av.,
CHICAGO, U. S. A.

The Little Giant Excavator.

A LONG FELT WANT SUPPLIED.

For DITCHING, EXCAVATING

Loading Wagons

and Cars, Etc.

50 TO 100 PER CENT. SAVED
IN LABOR.



Capacity of Machine 500 to 700 cubic yards per day. Self propelling. Easily moved. Being built entirely of steel, is both strong, light and a very substantial machine. Can be used on flat-boats for dredging ditches, irrigating or digging canals. Contractors and railroads promptly furnished with estimates for excavators of every description.

Address VULCAN IRON WORKS, Toledo, Ohio.

BACON

Winding Engines,
Furnace Hoists,
Mine Hoists.

(With or without Boilers.)

"Mining Plants," Concentrating Works, and Dredging Machinery Furnished Complete.

COPELAND & BACON,

85 Liberty Street, New York.

309 Arch Street, Philada.

References: Croton Magnetic Iron Mines, Brewster's, N. Y.
Crown Point Iron Co., Crown Point, N. Y.
Belvidere Iron Co., on Broadway, N. Y.
Sea Island Chemical Co., Beaufort, S. C.



TRADE NOTES.

The American Meat Cutter and Chopper.

This meat cutter was placed upon the market during the fall of 1886, and since then the manufacturers have had the most satisfactory reports of their superiority. The knives are now constructed so that it is almost impossible to place them in position improperly, and it is claimed that these combined cutters and choppers will cut finer and faster than any machine ever placed upon the market.

The meat, before reaching the perforated plate, is cut by the two knives with a motion



similar to that of a pair of shears, then forced on against the perforated plate, where it is again cut, passing on through the small holes in the plate. In this manner all the meat, strings, gristle and sinews have been doubly cut, and do not come through the small holes in continuous strings, but are separated and cut into short pieces.

There is nothing to get out of order. They are easily taken apart, easily cleaned and easily put together. The crank or handle requires no screws or pins to hold it securely on the machine, but is attached and detached in a second.

The editor of the MANUFACTURERS' RECORD has had one of these cutters in his family for several months and unhesitatingly gives it his endorsement and commendation.

THE following very flattering endorsement has been received by the Star Portable Forge Co., of Buffalo, N. Y.:

NAVY YARD, NEW YORK, July 5, 1887.

Sir—In obedience to your order of the 9th of June (a copy hereunto attached) to make a careful and thorough test of the Star Machine Co.'s Improved Portable Forge, the board met on June 28 and proceeded to carry out said order. Forge No. 8, as per circular appended, was the one chosen for trial, it being best suited for purposes under the cognizance of the Bureau of Steam Engineering for use on board of vessels. After a fire had been well under way two pieces of iron two inches in diameter were brought to a welding heat in five minutes and a clean smooth weld made. The blast is excellent and continuous, the frame of the forge well braced, and set screws are so arranged as to take up the lost motion of the shaft and other parts. In conclusion, we beg to state that it is the best portable forge that has come under our notice, and we therefore recommend it for use in the naval service.

Very respectfully,

[Signed] JOHN L. D. BOTHWICK,
Chief Engineer, U. S. N.
J. J. BARRY,
Passed Ass't Eng'r, U. S. N.
F. C. BOWERS,
Ass't Engineer, U. S. N.
To Commodore Bancroft Gherardi, U. S. N.
Commanding U. S. Navy Yard, New York.

If you contemplate a visit to New York you should send for a copy of a comprehensive, well-written and accurate guide to the city—128 pages and map—entitled "How to Know New York." Sent on receipt of six cents in stampa. Address Advertising Department, Grand Union Hotel, New York. †

A LETTER from Natchez, Miss., says: "Protection Fire Co.'s new steam engine, Silsby make, was tested to-day in the presence of the Board of Aldermen, the company and hundreds of citizens. She came up to all the requirements in each of the six tests, notwithstanding the unfavorable winds and very defective hose, which latter gave way whenever any great pressure was put on it. Steam was raised in the engine in two minutes after the fire was lighted, and in six minutes she forced water. She is a fourth-class machine, and through 100 feet of hose, 1 1/4-inch nozzle, threw 225 feet, and through 1,000 feet of hose, 1-inch nozzle, threw 185 feet. She proved satisfactory to her purchasers in all respects." This engine was made by the Silsby Manufacturing Co., of Seneca Falls, N. Y.

THE business of the Ingersoll Rock Drill Co. increases month by month. They have recently furnished complete mining plants to the Dallas Mining Co., of Dallas, Ga., and the Briarfield Coal Co., of Briarfield, Ala.; have also done some creditable work among the contractors on the line of the Canadian Pacific Railway.

Literary Notes.

THE illustrated articles on "Astronomy with an Opera-glass," appearing in the Popular Science Monthly, will be continued in the August number, with an intensely interesting account of what can be seen with a small glass on the moon and the sun. Andrew D. White will conclude his account of the astonishing superstitions of the middle ages respecting diabolical influence in the production of storms, and the same number will have an article on "Educational Endowments," by Charles S. Ashley, showing that great endowed institutions have not been efficient as means of intellectual progress.

MESSRS. L. B. VOLK & SON, architects, Tribune Building, New York, have issued a portfolio of designs for cottages and country houses that will be found of much value to any who are thinking of building. The plans shown furnish convincing evidence that low cost of construction is not incompatible with architectural beauty. In the interiors, comfort, convenience and artistic finish are happily combined. The designs represent houses that have been built.

"THE TRADE, COMMERCE AND MANUFACTURES OF BALTIMORE" is the title of a very elegant illustrated work just issued by Mr. John R. Bland, secretary of the Merchants' and Manufacturers' Association of this city. It is printed in over thirty different tints, and is illustrated by many fine engravings of business houses, wharves, dwellings, &c.

Important.

When visiting New York city, save baggage express and carriage hire, and stop at the Grand Union Hotel, opposite Grand Central Depot.

600 handsomely furnished rooms at \$1 and upwards per day. European plan. Elevators and all modern conveniences.

Restaurants supplied with the best. Horse cars, stages and elevated railroads to all depots. You can live better for less money at the Grand Union Hotel than any other first-class hotel in the city. †

ONE of the best hotels in Boston for business travelers or pleasure tourists is the American House, centrally and conveniently located and most excellently kept. †

THE Palace Hotel, Cincinnati, Ohio, is the best, finest furnished and most complete \$2.00 hotel in America. 250 rooms; 140 front rooms. Complete fire apparatus and iron balcony fire-escapes. †

MANUFACTURERS' AGENCY
For the Purchase and Sale of
MACHINERY,
New and Second-Hand of Every Description.
COTTON AND WOOLEN A SPECIALTY.
Also, Cotton Yarns of All Descriptions,
and Manufacturing Properties.
L. GODFREY, 26 Exchange Place, PROVIDENCE, R. I.

List of Patents.

The following Patents were granted to citizens of the Southern States, bearing date July 12, 1887. Reported expressly for this paper by Louis Baggett & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.
Anderson, J. S. B., Norfolk, Va. Ship's propeller..... 366,550
Brewington, H. S., Baltimore, Md. Strap for securing packages..... 366,555
Bridges, J. T., Hancock, Md. Fork, rake, &c. 366,371
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12-in. Double Table Shaping Machine, new. Planer, 24x4. Planer, 20x4, Lincoln, second-hand.

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30-in. " " " "

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One 32 x 32 x 9 ft. Planer; 2 Steam Pumps; Sturtevant Blower; Hand Boiler Punch; two 16-Horse Vertical Boilers, and one Horizontal Engine. Also, Engines and Boilers 3 to 45 horse power.

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— The Scenery on Every Side is Picturesque and Beautiful. —

SO MUCH SO THAT IT IS CALLED BY VISITORS

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There is no Place on the Continent more Healthful and Salubrious.

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Within the last six months numerous manufactures have been located here, among the number:

Five Large Blast Furnaces.
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Three Planing Mills,

One Saw Mill,
One Flour Mill,
One Wooden-Ware Factory.

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One Cotton Compress and Ice
Factory.

Two Brick Machines and
Three Hand-Brick Yards.

There are VAST BEDS OF IRON ORE within a few miles North and
IMMENSE COAL FIELDS SOUTH

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By the 1st of January the Nashville & Florence Railroad will be completed, making three lines of railroad, and the river, thus opening up VAST AREAS OF TIMBER, IRON ORE, COAL, Marble, Limestone, Kaolin, Fire-Clay, and almost every kind of mineral and product.

THE LANDS IN THE SURROUNDING COUNTRY ARE FERTILE AND PRODUCTIVE.

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* Reasons Why Capitalists and Manufacturers *
SHOULD MAKE GADSDEN THE FIELD OF THEIR OPERATIONS.

GADSDEN is situated in the midst of the RICHEST MINERAL SECTION OF ALABAMA; is on the West bank of the Coosa River. This stream furnishes Cheap Transportation to the Coal Fields and Iron Veins and Beds that are found all along its banks.

The Sand Mountain, Lookout and Coosa Coal Fields are at our very doors. *This Coal Cokes equal to any Coal in the South.* The immense forests that cover the mountain and plains, and all along the Coosa and along the five railroads running to Gadsden, will for ages furnish as **CHEAP CHARCOAL AS CAN BE HAD ANYWHERE ON THE CONTINENT.** Limestone is found all around the city,—so Gadsden has in as great abundance, and at small cost, all descriptions of

→ Rich Iron Ores, Fine Coking Coals, best class Charcoal, and Limestone for the quarrying. ←

And, as an Iron center, no place in the favored State of Alabama can compare with Gadsden, when we consider our Ore and Fuel supply, our abundant Water, our unequaled Climate, **UNINTERRUPTED HEALTH and FINE TRANSPORTATION FACILITIES.** We have the most **INVITING FIELD** to all seeking locations, either for manufacturing iron in any of its varieties, or for investment in any other industries. Gadsden has to day in successful operation the

LARGEST CHARCOAL FURNACE IN THE STATE,

Has Four Large Saw Mills, with annual output of twenty million feet of the finest long-leaf Yellow Pine Lumber, three large Planing Mills, one Foundry and Machine Shop, two Gin and Flouring Mills, large Furniture, Sash and Door Factory, two Metallic Paint Mills, Ice Factory, a splendid system of Water Works, 80 pounds pressure, large steam Brick Works, and in course of construction a 100-ton Coke Furnace, being built by the Gadsden, Alabama, Furnace Co.; has stock subscribed for an additional Charcoal Furnace, has a National Bank, Cotton Compress, large Cotton Warehouse, handling 15,000 bales cotton, and a magnificent agricultural country all around us.

→ The Gadsden Land and Improvement Company ←
OWNS 3,000 LOTS,

And invites capitalists and manufacturers to come to Gadsden and see its advantages, pledging themselves to donate to any manufactory locating here, and working twenty-five men or more, **GROUND UPON WHICH TO LOCATE PLANT**, accessible to railroad or river. *Our Railroads afford transportation facilities equal to any point in the South.*

The Rome & Decatur gives close connections with the East Tennessee, Virginia & Georgia and Louisville & Nashville systems, the Anniston & Cincinnati with East Tennessee, Virginia & Georgia and Richmond & Danville, also the Alabama Great Southern Railroad; the Tennessee & Coosa Railroad with Alabama Great Southern, also the Tennessee River at Guntersville and the Central Railroad, when built, from Casselton to Decatur, making us on the short line from Kansas City and the West to Atlanta and the South Atlantic Coast.

Lots are Sold on the Most Favorable Terms:

One-third CASH, balance in one and two years.

We have a population of over 4,000, good Schools, and Churches of all denominations; splendid system of Electric Lights, Telephone Communication over the city, also to Rome, Ga. Boats run regularly the year round on the Coosa, carrying U. S. mail and freights from this point to Rome, Ga., a distance by water of 154 miles.

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The Gadsden Land and Improvement Co., →

Gadsden, Ala.



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Every Hammer or Tool having our name is fully warranted. Catalogues and discounts sent on application.



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Largest Manufacturers of Tackle Blocks in the World.

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WE CHALLENGE COMPETITION FOR

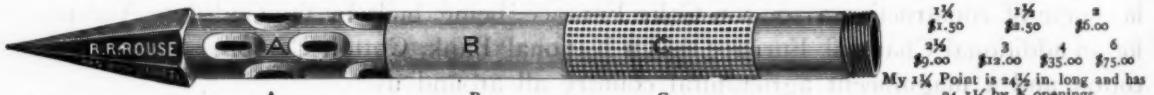
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A showing the openings before the wire gauze is soldered on. B after wire gauze is soldered on. C showing wire gauze and perforated brass soldered on. These $\frac{1}{4}$ Points (caliber) are Electro-Plated, with Pure Block Tin inside and outside before receiving the coverings, there being no raw iron to corrode or rust in the United States. Warranted not to strip loose where soldered. Write for discounts and circular.

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Write for our Catalogue and Price List and mention this paper.

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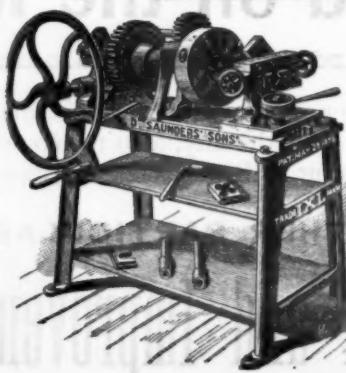
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MANUFACTURERS OF THE ORIGINAL



TRADE MARK.

I.X.L.
Pipe Cutting and
Threading Machine.

BEWARE OF IMITATIONS.
None genuine without our Trade
Mark and name. Also

Patent Wheel Pipe Cutter
STEAM AND GAS FITTERS'
HAND TOOLS,

Pipe Cutting and Threading Machine
For Pipe Mill Use a Specialty.
Send for Catalogue B.

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Baltimore WHOLESALE Prices.

ANVILS.	
Eagle and Vulcan.....	\$ D. 10 c. dis 50¢
Wright's.....	95¢
Armitage's Mouse Hole.....	90¢
Trenton.....	100¢
Wilkinson's.....	100¢

AUGERS AND BITS.

Conn. Valley Mig. Co.	extra, 60&10%
Douglas Mig. Co.	No. 1, 60&10&5%
Ives.....	dis 50&10%
Cook's Douglas Mig. Co.	dis 50&10%
Griswold.....	dis 50&10%
Patent Solid Head.....	dis 25%
Russell Jennings' Auger, Dowell, Machine- Dowel and Hand Rail Bits.....	dis 100&10&10%
Ives' " Jennings" Bits.....	dis 40&10&10%
Expansive Bits, Clark's small, #18; large, 36.....	dis 35%
Expansive Bits, Ives'.....	dis 35%
Expansive Bits Blake's.....	dis 50 and 50, dis 45%
Hollow Augers, Ives'.....	dis 25%
Hollow Augers, Douglass'.....	dis 40&10%
Hol. Aug., Bonney's Adjust., \$ D. 48.....	dis 40%
Hol. Aug., Stearns' Adjust., \$ D. 48.....	dis 40&10%
Hol. Aug., Ives' Expansive, each \$4.50, dis 30&10%	dis 30&10%
Hol. Aug., Universal Expansive, each \$4.50, dis 30&10%	dis 30&10%
Wood's.....	dis 25%
Gimlet Bits.....	dis 50, 50 gross, dis 50%
Gimlet Bits, Diamond.....	dis 50, 50 gross, dis 50%
Double Cut Gimlet Bits, Shephardson's.....	dis 40%
Double Cut Gimlet Bits, Douglass'.....	dis 40%
Double Cut Gimlet Bits, Ives'.....	dis 40%
Morse's Bit Stock Drill.....	dis 50%
L'Hommedieu's Ship Augers.....	dis 15%

AWLS, BRAD SETS, &c.

Awls, Sewing, Common.....	\$1.70—dis 35%
Awls, Shouldered Peg.....	\$2.45—dis 40%
Awls, Patent Peg.....	35 c.
Awls, Shouldered Brad, \$ gross \$0.70—dis 30&10%	
Awls, Handled Brad.....	57.50 gross, dis 40%
Brad Sets, Aiken's.....	dis 50, 50 gross, dis 45&10%
Brad Sets, No. 42, \$10.50; No. 43, \$12.50 dis 70&10%	
Brad Sets, Stanley's Exc., No. 1, \$9.50, dis 30&10%	
Brad Sets, Stanley's Exc., No. 2, \$4.50, dis 30&10%	
Brad Sets, Stanley's Exc., No. 3, \$7.50, dis 30&10%	

AXES.

Collins & Co.	\$7.00; beveled, \$7.50
Lippincott or Mann's.....	
Single Bit, 4½ to 5½ and under.....	\$ D. 6.75 net
Single Bit, 4½ to 6 and over.....	\$ D. 7.25 net
Single Bit, beveled.....	ex. doz. advance
Double Bit, 4½ to 5½ and under.....	\$ D. 22.00 net
Double Bit, 4½ to 6 and over.....	\$ D. 23.00 net
Double Bit, beveled.....	\$1.00 per doz. advance
Second quality Axes.....	75 cts. less than above

AXLES.

Sheldon & Co., iron.....	55¢ off
" " " steel.....	55¢ off

AXLE GREASE—Fraser's.

Spring Balances.....	dis 50%
BALANCES.	

BELLS.

Hand, Light Brass.....	dis 75&10%
Hand, White Metal.....	dis 70%
Hand, Silver Chime.....	dis 50&10%
Hand, Globe (Cone's Patent).....	dis 25&10%
Gong, Abbe's.....	dis 25&10%
Gong, Yankee.....	dis 40%
Gong, Barton's.....	dis 40&10%
Leon Reading.....	dis 25&10%
Pull, Brook's.....	dis 50&10%
Crank, Taylor's.....	dis 25&10%
Lever, Sargent's.....	dis 25&10%
Bloomfield.....	dis 20%
Lever, R. & E. M. Co.'s.....	dis 45&10%
Call.....	dis 40%
Cow, Common Wrought.....	dis 50&10%
Cow, Western, Sargent's List.....	dis 70&10%
Cow, Kentucky, Sargent's List.....	dis 70&10%
Cow, Moore's or Dodge's, Genuine Ky., new list: Nos. 0 1 1½ 2 3 5 5 6 Hog	dis 70&10%
\$1.50 \$2.50 \$3.50 \$4.50 \$5.50 \$6.50 \$7.50	
Cow, Texas, "Star".....	dis 50&10%

BELLows.

Blacksmith's Common.....	dis 50&10%
Molder's.....	dis 50%
Hand Bellows.....	dis 50%

BLIND FASTENERS.

Francis.....	dis 20%
Mackrell's.....	\$ D. pairs \$1.00, net, 20%
Van Sand's Screw Pattern, \$15 gross, net, dis 60%	
Van Sand's Old Pattern.....	\$15 per gross, net, dis 55%
Merriman's, 10¾ in.....	new list, net
Zimmerman's, 10¾ in.....	gross \$33.00
Zimmerman's, 9 in.....	gross \$30.00

BLIND STAPLES.

Barbed, 36 in. and larger.....	\$ D. 90 net
Barbed, 36 in.....	\$ D. 100 net

BLOCKS.

Penfield Blocks.....	dis 50&10%
Bagnall & Loud.....	

BOLTS.

Cast Iron Barrel Shutter, &c.....	dis 70%
Cast Iron Chain (Sargent's list).....	dis 65&10%
Wrought Barrel.....	dis 70%

BRAKES.

Wrought Square.....	dis 70%
Wrt. Shutter, all Iron, Stanley's list.....	dis 60&10%
Wrt. Shutter, Brass Knob, Stanley's list.....	dis 40&10%
Wrought Shutter, Sargent's list.....	dis 40&10%
Wrought Sunk Flush, Sargent's.....	dis 55&10%
Wrought Sunk Flush, Stanley's.....	dis 40&10%
Wrought B. K. Flush, Stanley's.....	dis 50&10%
Carriage and Tire, Common, new list.....	dis 70&10%
Carriage and Tire, Philadelphia Pattern.....	dis 75&10%
Carriage Bolts, Clarke's.....	dis 70&10%
Norway.....	dis 75&10%
R. B. & W. Carriage (old list).....	dis 70%
Tire, American Screw Co.'s, Phila.....	dis 82%
Tire, "Bay State".....	dis 65&10%
Eagle Philadelphia Tire Bolt.....	dis 80%
Stove.....	dis 65%
Plow.....	dis 60%
Machine.....	dis 70&10%
Volt Ends and Lag Screws.....	dis 70&10%

BORAX.

9c \$ D. net.	
BEACHEs.	

Q. S. Backus.....	dis 50%
Barber's.....	dis 50%
Spooffard's Patent.....	dis 50%
Ive's Patent Braces.....	dis 50%
Common Ball (American).....	45c. net
Amidon's.....	dis 40%

BORING MACHINES—WITHOUT AUGERS.

Sweet & Clark upright, 2½ angular.....	3.00 net
Lawrence " 3.00 "	3.50 net
Hubbard " 3.00 "	3.50 net

THE FRED. J. MEYERS MFG. CO.
COVINGTON, KY., Manufacturers of
WIRE GOODS OF ALL KINDS,
Wrought-iron Fencing, Cresting and Hardware Specialties
Send for Illustrated Catalogue and Price List.

Phillips, with Augers..... 7.00

BRACKETS.....

Shelf, plain..... dis 50&10%

Shelf, fancy..... dis 50&10%

BRIGHT WIRE GOODS.....

New list..... dis 75&10%

BULL RINGS.....

Union Nut Co. dis 55%

Sargent's..... dis 60&10%

Humason, Beckley & Co's. dis 70%

BUTTS.

Wrought Bars..... dis 50

Cast Brass, Fast Joint..... dis 35&10%

Cast Brass, Loose Joint..... dis 32&10%

Fast Joint, Narrow..... dis 40&10%

Fast Joint, Broad..... dis 40&10%

Loose Joint, Broad..... dis 40&10%

Loose Joint, Japanned..... dis 70&10%

Loose Joint, Jap., w/ Acorns..... dis 70&10%

Parliament Butts..... dis 70&10%

Mayer's Hinges..... dis 70&10%

Loose Pin, no Acorn..... dis 70&10%

Loose Pin, Acorn..... dis 70&10%

Loose Pin, Acorn, Jap'd, Plated..... dis 70&10%

Tips..... dis 70&10%

Wrought Iron.

Fast joint, Narrow..... dis 70%

Fast joint, Lt. Narrow..... dis 70%

Fast joint, Broad..... dis 70%

Loose joint, Broad..... dis 70%

Table Butts, Back Flaps, &c..... dis 70%

Inside Blind, Regular..... dis 70%

Inside Blind, Light..... dis 70&10%

Loose Pin, Wt. dis 70&10%

Spring Hinges—

Gear Spring and Blank Butts..... dis 30%

Hart Manufacturing Co. dis 60&10%

American Spring Hinges Co's. dis 25%

Blind Butts, Shepard's, Nos. 50 and 60..... dis 70%

Blind Butts, Shepard's, No. 050..... dis 70&10%

Blind Butts, Shepard's, No. 75..... dis 70&10%

Blind Butts, Lull & Porter..... dis 70&10%

Blind Butts, Huffer..... dis 60&10%

THE MARKETS.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, July 20, 1887.

The most glowing crop reports continue from all parts of the South. With no disaster to cut short the present prospects, the Southern States will produce much the largest crops that they have ever raised. Dangers are still in the way though, and it will be fully another month before we can count with safety upon the promised unprecedented yields. Industrial interests throughout the South are prospering and everything is moving along very smoothly. New enterprises are rapidly getting into shape, and we look for greater activity this fall than the South has yet seen. There are already signs of a coming rush of new industries, as soon as the hot weather is over.

In manufactured iron the local market shows no change, business continuing dull. We quote as before, viz:

Ref. Bar Iron, 1 to 6 $\frac{3}{4}$ to 1... " " 2.10@2.40
" " 1 to 4 $\frac{1}{2}$ x 1 $\frac{1}{2}$ to 1... " 2.10@2.40
" " $\frac{3}{4}$ to 2, round and square... " 2.10@2.40
Hoop Iron, 1 $\frac{1}{2}$ wide and upward... " 2.50@3.25
Band Iron, from 1 $\frac{1}{2}$ to 6 in. wide... " 2.40@2.75
Horseshoe Iron... " 3@3.25
Norway Nail Rods... " 4 $\frac{1}{2}$ @5.25
Black Diamond Cast Steel... " 8 $\frac{1}{2}$ @10
Machinery Steel... " 3@4.25
Spring Steel... " 3 $\frac{1}{2}$ @4
Common Horse Nails... " 8@9
Railroad Spikes, 5 $\frac{1}{2}$ x9-16... " 2 $\frac{1}{2}$ @3
Steel Boiler Plate... " 3 $\frac{1}{2}$ @4.25
Iron Boiler Plate... " 2 $\frac{1}{2}$ @4
Boiler Tubes... " 42 $\frac{1}{2}$ off list

There is a growing scarcity of charcoal iron in all parts of the country and stocks are said to be smaller than for many years, while the demand is heavy and promises to continue so. On this subject the Iron Age says:

"The natural result of such a condition of trade must be higher prices for the product which is so greatly in demand. This seems to be expected now on all sides, and the only difference of opinion exists as to the extent of the advance. Some are doubtless over sanguine who believe that \$30 will be touched. Unless the price of coke iron advances in a corresponding degree, a very high price for charcoal iron cannot be sustained. Coke iron will be substituted wherever possible. It may not answer for malleable castings, and probably some car-wheel works would hesitate about using it, but coke iron would certainly be used under such circumstances much more extensively than now by many manufacturers who at present believe themselves almost unable to get along without using Lake Superior charcoal pig iron for the bulk of their work. The limit of the upward movement in prices, in the absence of any disturbing element, would then seem to be the figure at which substitutes for charcoal pig iron would be sought for, and that is something to be ascertained by experience."

Reports from iron centers indicate a stronger feeling in the market, with prices very firm under heavier buying. Our Western correspondents say that sales have been more active than for some months. We quote as follows:

Baltimore Charcoal Wheel Iron (all Baltimore ore)... " " \$28.00@30.00
Virginia C. B. Charcoal Wheel Iron... " 27.00@29.00
Anthracite, No. 1... " 20.00@22.00
" " 2... " 18.00@20.00
" " 3... " 16.00@18.00
" Mottled and White... " 24.00@25.00
Old Rails... " 22.00@23.00
Old Steel Rails... " 22.00@23.00
No. 1 Wrought Scrap... " 22.00@22.50
Old Car Wheels... " 18.50@19.50

HARDWARE.

Trade continues fair notwithstanding the extremely hot weather prevailing throughout the country. Some of the factories have advanced picks and mattocks about 10 per cent. Very low prices are still prevailing on sledges, &c. The demand for shovels is becoming brisk and large orders are being placed. Copper rivets and bars are unchanged and are extremely low. Factories are not disposed to accept orders for chains at last season's prices and have advanced prices about 10 per cent. There are no other changes of moment.

Nails are about the same, less cutting is reported and sales are being made at about 2.10.

The Covert Manufacturing Co., of West Troy, N. Y., have issued a new catalogue, and advise their customers to "destroy all former catalogues received from us, as important changes have been made, and our new articles of manufacture, adjustable web halters, double snaps, hitching post and other goods, appear only in this. To avoid errors, please make up orders by using the numbers which designate each article in catalogue, as a failure to do this is a cause of much misunderstanding, unnecessary correspondence and delays in shipments." They have also issued the following list of new discounts:

DISCOUNTS—July 1, 1887.

Disc't per cent.

Loop Harness Snaps.....	50
" " " " Loop Harness Snaps.....	50&5
" " R. E. Harness Snaps.....	60
Martingale Loop Snaps.....	50
Snap and Thimble.....	60
" " Snap and Thimble.....	60&10
Thimbles.....	60&10
Round Eye Swivel Snaps.....	60
Loop Swivel Snaps.....	60
Heavy 1 in. Swivel Snaps.....	60
" " Giant Open Eye Snaps.....	35
Open Eye Snaps.....	50&10
" " Open Eye Snaps.....	50
Round Eye Snaps.....	60&10
No. 38 Round Eye Snaps.....	50
Double Snaps.....	50
Combined Bit and Snaps.....	35
Leather Horse Tie.....	35
Strap Eyes.....	50
Horse Ties, Snap and Thimble, (jute).....	60&10
Horse Ties, Snap and Thimble, (Hemp).....	50
Cattle Ties, Snap and Thimble, (jute).....	60&10
Cattle Ties, Snap and Thimble, (Hemp).....	50
Horse Tie, "New" Snap and Thimble, (jute).....	60&10
Cattle Tie, "New" Snap and Thimble, (jute).....	60&10
Lariat Tether.....	50&10
Picket Pins.....	60
Horse Tie, O. K. (jute).....	60&20
Cattle Tie, O. K. (jute).....	60&20
Web Horse Tie.....	50
Rope Halter, 1/2 in. (jute).....	50
Rope Halter, 1/2 in. (Hemp).....	40
Rope Halter, 7-16 in. (jute).....	60&10
Halter Leads, (Hemp).....	50
Halter Leads, (jute).....	60
Halter Leads, (jute) "New" Snap.....	60&10
Gentlemen's Hitching Cord.....	35
Weight Cord.....	35
Hitching Weight.....	50
Driving Reins.....	40
Hammock Ropes.....	60&20
Adjustable Web Halter.....	35
Web Halter.....	35
Bull Leads.....	35
Bull Snap.....	35
Soldering Irons.....	35
Soldering Copper.....	30
Bristle Card.....	35
Breast Chain, Short Snaps.....	50
Lengthening Snaps.....	35
Open Eye Breast Chain Snap.....	35
Breast Chain, Long Snap.....	50
Post Chain.....	60
Breast Chain, New Patent.....	50
Center Breast Chain Snap.....	35
Stallion Chain.....	35
Cart Breech End Irons.....	35
Cart Breaching Chains.....	30
Halter Chain.....	50
Rein Chain.....	60
Heel Chains.....	40
Chain Cow Tie.....	35
Back or Cart Chain.....	30
Long Trace Chains.....	35
Halt Trace or Butt Chain.....	35
Balling Iron.....	35
Hitching Post.....	35
Rod Post Hitcher.....	60&20

Philadelphia Iron Market.

PHILADELPHIA July 19, 1887.

The general situation in the iron trade is better than early in the month. Every consumer is buying with more faith in the improving tendency in trade. The basis of the activity is the incoming of numerous orders in all industries. Ship and boat, car and locomotive builders and down to the smaller shop buyers are all making good purchases of raw material. Pig iron is to be had at \$21@\$21.50, and plenty of it, though first-class brands are hard to find under \$22. The attempt to boom forge iron up to \$18 through one or two trade newspapers failed and plenty good iron can be had at \$17.50. No one is concerning himself about foreign material though brokers expect some fat commissions yet. Merchant bars are quite active and a little stronger. Makers are not cutting or shading prices; quotations 2@2.10. Nails 2.10 to 2.20. Plate iron is very active, and some big orders have been taken this week at 2.30; all the mills will be on next week. Wrought iron pipe is quiet; a mill is idle on account of a strike. Bridge iron is active at 2.25 for angles and 3.30 for beams and channels. A few small lots of steel rails were taken at \$39.50. Old rails are quoted at \$23.50. Prices are not steady. Some buyers are out and have paid high prices for spot lots.

Cincinnati Iron Market Report.

Specially reported by ROGERS, BROWN & CO., Pig Iron Commission.

CINCINNATI, July 18, 1887.

The continuance of heavy enquiries and sales, with steady reduction of stocks noted in previous circulars, has begun to finally exert a marked influence on the market. Sales have been made this week at prices averaging perhaps 50 cents per ton higher, taking all grades together. The orders on this basis have been very heavy, probably the heaviest week in the year, and enquiries at the end of the week were coming in very liberally. There is little disposition on the part of furnaces to force prices much higher, as most of them dread the effect of too high a range of values. The marked scarcity of grades, however, may force a sharp advance that all conservative makers would deprecate. A steady and prosperous trade is now considered assured for the remainder of the year in all leading branches of the iron business. We quote for cash f. o. b., Cincinnati:

HOT-BLAST FOUNDRY.

Ohio and Southern Strong Coke No. 1... \$30.00@30.50
" " " " No. 2... 19.00@19.50
" " " " No. 3... 18.00@19.00
Ohio Soft Stonecoal, No. 1... 30.00@30.50
Ohio Soft Stonecoal, No. 2... 19.00@19.50
Mahoning and Shenango Valley Coke, No. 1... 25.00@25.00
Hanging Rock Charcoal No. 1... 23.00@24.00
" " " " No. 2... 22.00@23.00
Tennessee & Alabama Charcoal No. 1... 22.00@23.00
" " " " No. 2... 21.00@22.00

FORGE.

Strong Neutral Coke... \$18.00@18.50
Mottled " " " " 16.50@17.00
Cold Shortnings... 17.00@17.50

CAR WHEEL AND MALLEABLE.

Southern Car-Wheel Iron... 25.00@26.00
Hanging Rock Cold Blast, No. 1... 25.00@26.00
Hanging Rock Cold Blast, No. 2... 24.00@25.00
Lake Superior Malleable... 25.00@26.00

Louisville Iron Market.

Specially reported by GROD, H. HULL & CO., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, KY., July 18, 1887.

There are large inquiries for pig iron from Louisville buyers and adjacent territory. Prices up to the last twenty-four hours have ranged about the same as the preceding week. An advance of fully \$1 per ton has taken place on some grades of iron, and sellers are not willing to accept offers that were current last week on any grades. We quote for cash as below:

PIG IRON.
Southern Coke, No. 1 Foundry... \$20.00@21.50
" " " " 2... " 19.00@20.50
" " " " 3/4... " 18.50@19.00
Hanging Rock Coke, No. 1 Foundry... 19.00@20.50
Southern Charcoal, No. 1 Foundry... 21.50@22.50
Silver Gray, different grades... 17.50@18.50
Southern Coke, No. 1 Mill, Neutral... 18.00@18.75
" " " " 2... " 17.50@18.25
" " " " 1... " 17.50@18.00
Southern Charcoal, No. 1 Mill... 19.00@20.00
White and Mottled, different grades... 16.50@17.50
Southern Charcoal, standard brands... 25.00@26.00
" " " " other brands... 22.00@24.00
Hanging Rock Cold Blast... 25.00@26.00
" " " " Warm... 22.00@23.00

Specially reported by W. B. BELKNAP & CO., Nails, Wire, Iron, Hardware, Carriage and Wagon Goods.

LOUISVILLE, KY., July 18, 1887.

There has been nothing whatever of interest within the last week to report in regard to the movement of goods from this market. The weather has precluded any show of energy in new enterprises, and buyers and sellers have alike been indifferent as long as they could remain individually in respectful comfort. There has been no weakness in any of the leading lines, nor is there any disposition to advance prices to a very high notch.

Reports from the crop districts are still encouraging, and while there is still time for disappointment, at present every prospect pleases.

Chicago Iron Market.

Specially reported by ROGERS, BROWN & CO., W. BACKMAN, Resident Agent.

CHICAGO, July 18, 1887.

The predictions in these reports for the past month are being fully verified in the course of the market. Lake Superior charcoal iron has advanced clearly \$1.50 per ton,

and the tendency is to still further improvement. Some considerable sales were made at \$21.50 cash, Chicago. Leading dealers now hold firm at \$23, and some good orders at this figure would put prices up another dollar, as the quantity of iron in sight is very small, and production is declining rather than increasing. Other grades are firm, with a stiffening tendency. Cheap lots which were plentiful a month ago are now entirely wanting. Southern coke irons are scarcely offered, and Ohio coke irons are scarce on account of coke strike. The large agricultural works here placed their orders last week. We quote for cash f. o. b., cars Chicago:

COKE AND STONE COAL FOUNDRY.

Ohio (Hanging Rock) Softeners No. 1... \$21.50@22.50
" Blackband " " 21.50@22.50
" Jackson county " " 21.50@22.50
" Lake ore and cinder " " 21.50@22.50
Southern Coke, No. 2... 21.50@22.50
" " " " 23/4... 20.50@21.50
" " " " 3... 20.50@21.50
CHARCOAL FOUNDRY.

Lake Superior... 22.50@23.50

Southern... 22.50@23.50

Hanging Rock... 24.50@25.50

CAR WHEEL AND MALLEABLE.

Lake Superior... 22.50@23.50

Standard Southern... 24.00@25.00

Hanging Rock, cold blast... 27.00@28.00

" warm blast... 23.50@24.50

OLD MATERIALS.

Old Rail, American... 24.00@25.00

Old Wheels... 20.50@21.50

OLD IRON.

Missouri... 21.00@22.00

Southern... 21.00@22.0

A Remarkable Welding Compound.

The organization of the Sparger Steel Compound Co., of Bristol, Tenn., with a capital stock of \$100,000, to manufacture Sparger's white heat steel compound, gives assurance that this remarkable welding compound will be brought to the attention of the public generally. Mr. W. A. Sparger, the former owner and who is also president of this company, has been so absorbed in other business that he has been able to give but little time to pushing his welding compound. And yet the demand for it has steadily grown. Some months ago a correspondent of the MANUFACTURERS' RECORD, writing from Bristol, said:

"I must tell you of something truly marvelous which I witnessed yesterday in the welding of steel. Mr. W. A. Sparger, of this city, is the owner of a 'patent white heat welding compound,' the bulk of which is a natural deposit, discovered in East Tennessee, and is manufactured expressly for working steel. I saw an old rasp, made of the hardest steel, heated to a white heat, and then, after having borax, which is commonly used in welding, applied, burnt up until it was perfectly worthless. The smith broke a piece of it off, and heating to a white heat again three pieces of the same rasp, he covered them with the 'Sparger compound,' welded the three pieces together so that not a trace of a seam or crack showed, and there manufactured out of what a few minutes before was worthless stuff, a perfect cold chisel, splendidly tempered and polished. The action of the compound restores the burn-out carbon, which is the life of the steel, and renders it tougher than before. I would not have believed it possible if I had not seen it. The chisel itself was presented to me. This compound will work wonders in the utilizing of old steel scraps, and hundreds of thousands of dollars will be saved, in what have heretofore been thrown away. Steel scraps can be welded into solid bars without a flaw of any kind whatever. It has been tested in New York on different qualities of the metal by Joshua Rose, M. E., who says that 'it greatly improves the cutting qualities of the steel, and the result was the same with two different qualities.' Mr. A. C. Milliken, general manager Millvale Steel & Iron Works, Pittsburgh, Pa., says: 'I think it wonderful, and do not hesitate to say I have never met with any welding compound half so good.' He adds: 'I know in a short time you will have more orders than you can fill.' The Newark Steel Works some time since ordered 600 pounds to give it a fair test. Mr. Sparger showed me yesterday an order from them for 12,000 pounds, thus emphasizing the old adage of 'the proof of the pudding, etc.' Many other testimonials equally as strong could be given. In a circular issued by the new company it is said:

"Two years of close testing proves conclusively, that the 'compound' is better and cheaper than borax or any other compound. By its use steel can be welded to steel or iron welded to steel with the best results. It never misses welding when heated hot enough, and there is absolutely no danger of burning steel when the 'compound' is properly used."

It will restore steel when burned and make it as good as ever. To do this, take the burnt steel, heat it to a 'white heat,' and then cover it with the compound; in a moment the latter will be seen to melt, and permeate the steel like kerosene would a porous block of wood; hammer gently and the steel is restored. Try it.

For use in steel tool manufactories it is indispensable, as it will be seen that by its use, steel may be worked under as high heat as iron, making it just as easy to 'shape up' a solid steel axe as one of softest iron; and it has been demonstrated by actual experiments that saws, hammers, edged tools, etc.,

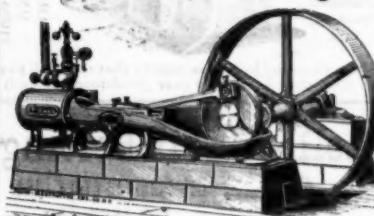
tempered by the use of the compound, will do twice as much service as those made in the old way.

Another very important advantage it has over borax is, in welding steel or iron, as both metals may be brought to a 'white heat' and worked just as you would two pieces of iron."

Manufacturers desiring to try this compound will find it worth their while to write to the company for full particulars as to prices, its use, etc.

"THE building permits issued by the city during the past sixty days amount to over \$600,000," writes a correspondent at Fort Smith, Ark. That is the way to build a town. Build houses or else let other people have property at low prices if they will guarantee to build. A building boom is what the South needs. Nothing else that Birmingham ever did could so impress upon strangers the solid and substantial foundation of that place and its great future as the fact that 2,500 houses are now under construction. When the citizens of a place are thus seen putting \$3,000,000 or \$4,000,000 into houses at one time and the whole city one vast center of building activity, the effect on strangers is magical.

DIXON'S graphite machine grease is not intended for use in an oil cup. For gears, for loose-fitting journals and bearings, where such a grease can be used, complete satisfaction is guaranteed. It is made only by the Jos. Dixon Crucible Co., Jersey City, N. J.

The "MOGUL" Engine.

NEW DESIGN.

Bearings extra long, compact, simple, strong, durable, and of
Superior Workmanship and Materials.

**The BEALL Engine, Boiler
AND MACHINE WORKS,**

MERRIN McKAIG. CUMBERLAND, MD.

MANUFACTURERS OF

The "MOGUL" Engines,

Pulleys, Shafting, Couplings, Collars, &c.
Pulley Turning Machines, Pulley Boring Ma-
chines, Shaving Lathes, Shafting
Straighteners and Cylinder Boring Machines.

Send for low price-lists and big discounts.

Norwalk Machine Works,

Sole Proprietors and Manufacturers of

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Which, for CLOSE REGULATION,
UNIFORMITY OF SPEED, GOOD WORK-
MANSHIP AND MATERIAL, ARE THE
BEST MADE.

Also,

Steam Engines

from

3 to 50 H. P.

Holsting, Stone Sawing,
Planing and Turning

MACHINERY.

Write for Prices.

Office and Works:

NORWALK, Ohio.

**WEBBER'S
Centrifugal Pumping Portable Machinery.**

Giving greater efficiency than any other Centrifugal Pump on the market. Send for catalogue.

LAWRENCE MACHINE CO.

Mason Building, BOSTON, MASS.

New York Office, 17 CORTLANDT ST.

AGENTS—J. Post, Jr. & Co., Boston, Mass.; Fairbanks & Co., St. Louis, Mo.; H. P. Gregory & Co., San Francisco, Cal.; R. H. Buchanan, Montreal, P.Q.



Patented April 18, 1871. Renewed July 26, 1876.
OVER 9,000 USES.

Adapted for Warehouses, Stores, Factories, Hotels, Public Institutions, and every place where merchandise, &c., is transferred from one store to another.

JAMES BATES, Pattee, Nos. 1 3 & 5 President Street, BALTIMORE.

If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year, or six months for \$1.50.

ROOT'S NEW IRON BLOWER.**POSITIVE BLAST.****IRON REVOLVERS,
PERFECTLY BALANCED.**

Has fewer parts than any other Blower. Also, Blacksmith Blowers, Portable Forges, Tuyeres Irons, and Gas Exhausters.

P. H. & F. M. ROOTS, Manufacturers, CONNERSVILLE, IND.

Send for Priced Catalogue.
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Marble Monuments

Tombs, Altars, Counters,
Furniture Slabs, Mantels, Tiles.
Estimates and Drawings Free.

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Machinists and Millwrights**

Engines and Boilers, Mills of all kinds, Marine Railways, &c. Improved Clay Tempering Machinery, Steam or Horse Power. Phosphate Machinery, Crushers, Rollers, Mixers, &c., &c. 40, 42 & 44 York Street, NEAR LIGHT, BALTIMORE.

Repairing of all kinds promptly done.

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MANUFACTURERS OF

Locomotive, Fuel and Portable**BOILERS**

BLAST FURNACES, PRISON WORK,
Oil Tanks and Sheet Iron Work. Repairing Promptly Attended to. Write for Estimate.

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ADAPTED TO

Heating Apparatus, Dryers, Slashers, Jacket Kettles, Air and Water Pumps, Hydraulic Elevators, Glue Kettles, Worms for Distilling, Chemical Works, Sugar Refineries, Dye Houses, Rubber Works, Distilleries, Breweries, Bleachers, Drying Kilns, Paper Mills, Rubber Works, Vitrol Works, Soap Factories, etc., or manufacturing requiring a constant, UNVARYING PRESSURE below that of the boiler.

Send for catalogue.

G. M. DAVIS & CO., Chicago.

**HYATT PURE WATER SYSTEM.**

Adapting Nature's Process—Endorsed by the Highest Authority.

A Perfect Water Purifying System.

A thousand or more in use in cities, towns, water companies, factories, mills, steam boilers, public institutions, private residences.

Indispensable to Textile Manufacturers.

Adapted to every condition requiring clean, bright water in any quantity. Perfect in operation, quickly cleaned automatically, reliable, indestructible.

MUDY WATER MADE CLEAN.**HARD WATER MADE SOFT.**

Organic and semi-soluble elements removed.

Scale and Mud Deposits in Boilers Prevented. HAS NEVER FAILED.

Promised Results Guaranteed. Adopted by Somerville & Raritan N. J. Water Co.; City Water Co., Belleville, Ill.; Water Works, Charleston, W. Va.; Clark Thread Works, Newark, N. J.; Earl & Wilson, Troy, N. Y.; Norfolk & N. B. Hosiery Co., New Brunswick, N. J.; Victor Knitting Mills, and sixteen other knitting mills, in

Cohoes, N. Y.; Hon. Daniel Manning, Albany, N. Y.; and hundreds of others. For Circulars, Prices, etc., Address

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MANUFACTURERS' RECORD.

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Wm. Rogers Manf. Co.	dis 50cts
Holmes, Booth & Hayden	dis 50cts
Wallace's Steel Silver Plated.	dis 33 1/2cts
Rogers Bros 1847.	dis 50cts
C. Rogers & Bro.	dis 50cts

SCREWS.

Standard new list, Feb. 25.

Flat Head Bright.	70cts
Round Head Blued.	65cts
Round Head Bright.	65cts
Flat Head Brass.	65cts
Round Head Brass.	60cts
Flat Head Blued (add 5cts to net).	70cts
Brass and Silver Capped.	40cts
Japanned Flat Head.	65cts
Coach, Patent Gimlet Point.	dis 65cts
Coach, Common or Lag.	70cts
Bed.	dis 25cts
Machine, Flat Head, Iron.	dis 55cts
Machine, Round Head, Iron.	dis 50cts
Bench, Iron.	dis 55cts
Bench, Wood, Beach.	dis 50cts
Bench, Wood, Hickory.	dis 50cts
Hand, Wood.	dis 50cts
Hand Rail, Sargent's.	dis 60cts
Hand Rail, Humason, Beckley & Co.'s.	dis 40cts
Hand Rail, Am. Screw Co., list Jan. 1, '81.	dis 70cts
Jack (Wilson's).	dis 55cts

SCREEN FRAMES AND FIXTURES.

Standard Window Screens No. 1,	dis \$4; 2, \$5
" " Door	No. 5, \$5; dis 50cts
" " Window Corner Irons, No. 3, dor. st's,	\$8
" " Door	No. 6, " " \$3
" " Door Latches, \$3.60.	dis 50cts

Porter's Patent Window and Door Screen Frames:

	PER DOZ. SETS.
In	Im. Blk'
White.	Walnut.
No. 20	\$75
No. 21	2.25
No. 22	5.50
No. 23	6.75
No. 24	8.00
No. 30	9.00
	11.00

PORTER'S CORNERS—

No. o. Corners and Sticks complete for a three-foot window, \$10 doz sets.	\$4
No. 1. Set for Window, \$10 doz sets, Bronzed, " " Nickel, \$5.60	\$4.40; \$5.60
No. 2. " " " " " " " " Nickel, \$7.90	\$7.90
No. 4. " " " " " " " " Nickel, \$8.00	\$8.00
No. 36. " " " " " " " " Nickel, \$3.00	\$3.00
No. 44. " " " " " " " " Nickel, \$4.00	\$4.00
No. 54. " " " " " " " " Nickel, \$4.00	\$4.00
No. 3. " " " " " " " " Nickel, \$4.00	\$4.00

Boughton's Adju. Window and Door Screens, \$25

Boughton's Adju. Window and Door Frames, \$20

Window screen frames (Stuart's), \$15

SCHEARS AND SCISSORS.

American (Cast) Iron.	dis 70cts
Pruning.	dis Pruning Hooks and Shears
Barnard's Lamp Trimmers.	dis 40cts
Tinners.	dis 20cts
Massachusetts.	dis 80cts
Seymour's.	dis 60cts
Jersey Shears.	dis 80cts
J. Wiss & Son, Nickle, \$0.75; Japanned, \$0.10	\$0.75

SHAVES AND SPADES.

Sliding Door, M. W. & Co., List.	dis 45cts
Sliding Door, R. & E. list.	dis 40cts
Sliding Door, Patent Roller.	dis 40cts
Sliding Door, Pt. Roller, Hatfield's.	dis 40cts
Sliding Door, Russell's Anti-Friction.	dis 40cts

Also see Hangers.

SHOVELS AND SPADES.	
American (Cast) Iron.	dis 70cts
Pruning.	dis Pruning Hooks and Shears
Barnard's Lamp Trimmers.	dis 40cts
Tinners.	dis 20cts
Massachusetts.	dis 80cts
Seymour's.	dis 60cts
Jersey Shears.	dis 80cts
J. Wiss & Son, Nickle, \$0.75; Japanned, \$0.10	\$0.75

SHEARS AND SPADS.

Ames, New List, November 1, '88.	dis 50cts
Griffiths.	dis 50cts
Remington's (Lowman's Patent).	dis 50cts
Rowland's.	dis 50cts
Lippincott, new list.	dis 50cts
Hussey, Bins & Co.	dis 50cts

SILVER PLATED HOLLOW WARE.

Wm. Rogers Manf. Co.	dis 50cts
Meriden Britannia Co.	dis 40cts

SOLDERING IRONS AND COFFERS.

Covert's Soldering Irons.	dis 35cts
Covert's Adjustable Coppers.	dis 35cts

SPOONS.

Britannia.	dis 60, 10cts
Tinned, Iron, Table and Tea.	dis 65cts
Tinned Iron Basting.	dis 50cts
German Silver.	dis 40cts

STONE.

Hindostan No. 1, 4c; Axe, 5c.	net
Sand Stone.	dis 50cts
Washita Stone.	dis 50cts
Washita Stone, Slips.	dis 50cts
Arkansas.	dis 50cts

SQUARES.

Steel.	dis 50cts
full cases, dis 70cts	\$1.00
Iron.	dis 50cts
nickel plated.	add 50cts
Try Square and T Bevels.	dis 50cts

TACKS, BRADS, &c.

American Iron Carpet Tacks, all kinds.	70cts
Swedes Iron Carpet Tacks, all kinds.	70cts
Swedes Iron Tacks.	67cts
Swedes Iron Upholsterers' Tacks.	67cts
Tinned Swedes Iron Tacks.	67cts
Tinned Swedes Iron Upholsterers' Tacks.	67cts
American Iron Cut Tacks.	67cts
Gimp and Lace Tacks.	67cts
Tinned Gimp and Lace Tacks.	67cts
Copper Tacks.	50cts
Copper Finishing and Trunk Nails.	50cts
Cigar Box Nails.	45cts
Finishing Nails.	60cts
Trunk and Clout Nails.	60cts
Tinned Trunk and Clout Nails.	60cts
Basket Nails.	60cts
Chair Nails.	60cts
Zinc Glaciers' Points.	45cts
Common and Patent Tacks.	60cts
Hungarian Nails and Miners' Tacks.	60cts
Tinned Capped Trunk Nails.	50cts
Looking Glass Tacks.	40cts
Picture Frame Points.	40cts
Leathered Carpet Tacks.	40cts
Brush Tacks.	40cts

TAP BORERS.

Common and Ring.	dis 50cts
Ives' Tap Borers.	dis 15cts
Enterprise Mfg. Co.	dis 50cts

TOBACCO CUTTERS.

Enterprise Mfg. Co. (Champion).	dis 20cts
Wood Bottom.	dis 25cts
All Iron.	dis 30cts
Wilson's.	dis 50cts

The Salem Wire Nail Co.

SALEM, OHIO.



Patent FISH & TERRAPIN TRAP

FOR RIVER AND CREEK FISHING.



Pat. Dec. 28, 1886.

J. S. JOHNSON & CO.
Manufacturers Twines and Netting,
121 South St., BALTIMORE.

Write for Description and Prices.

LEED'S FILTERING JOINT

Prevents Soot, Leaves, Bugs, Caterpillars or dead Birds from entering the Cistern.

It is the Cheapest and Best Filter ever made.

It will not clog up.

Always set for use.

Prices and Descriptions furnished on application.

THOMAS LEE,
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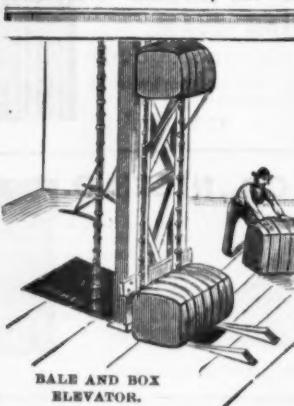
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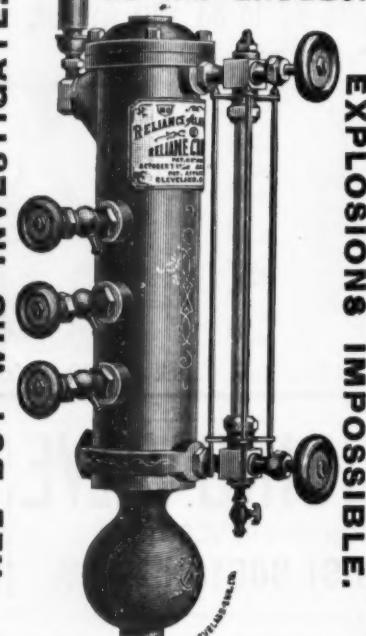
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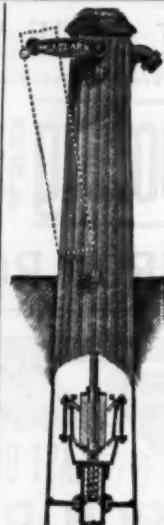
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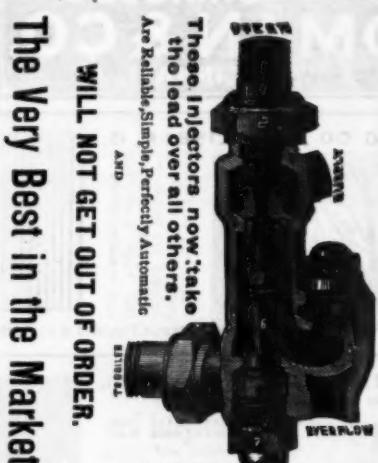
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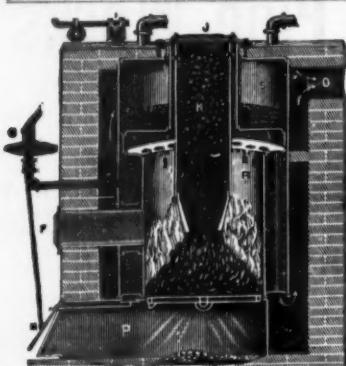
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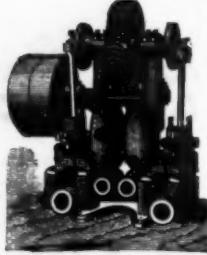


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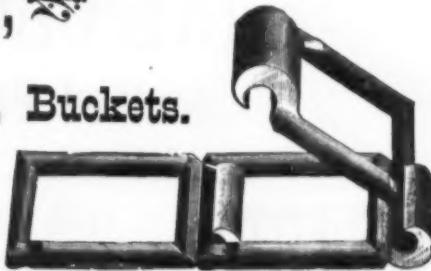
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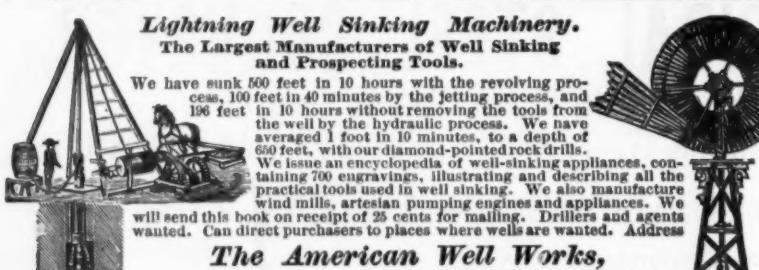
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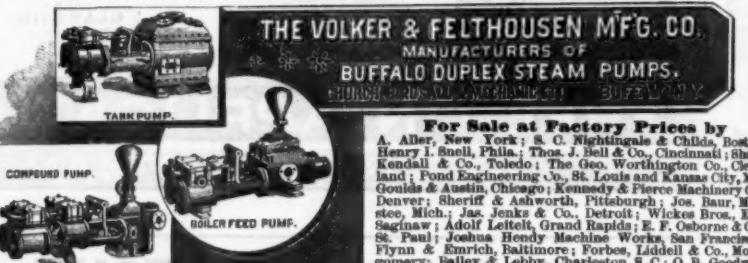
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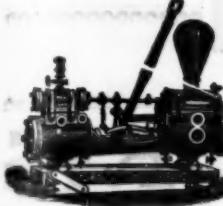
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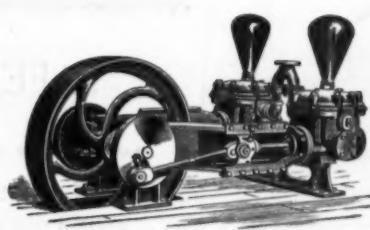


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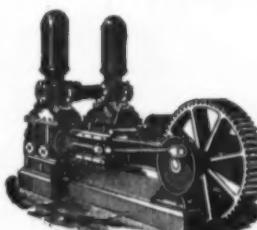
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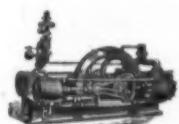
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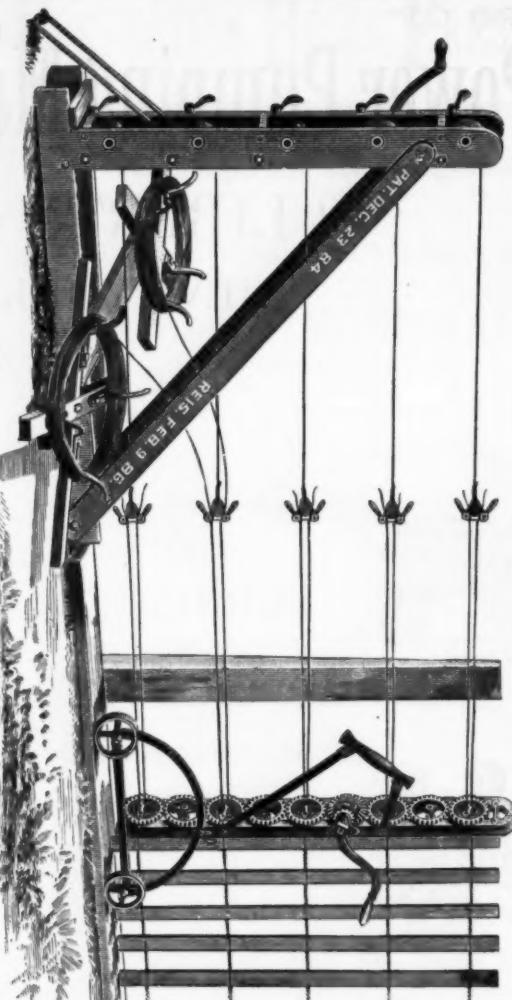
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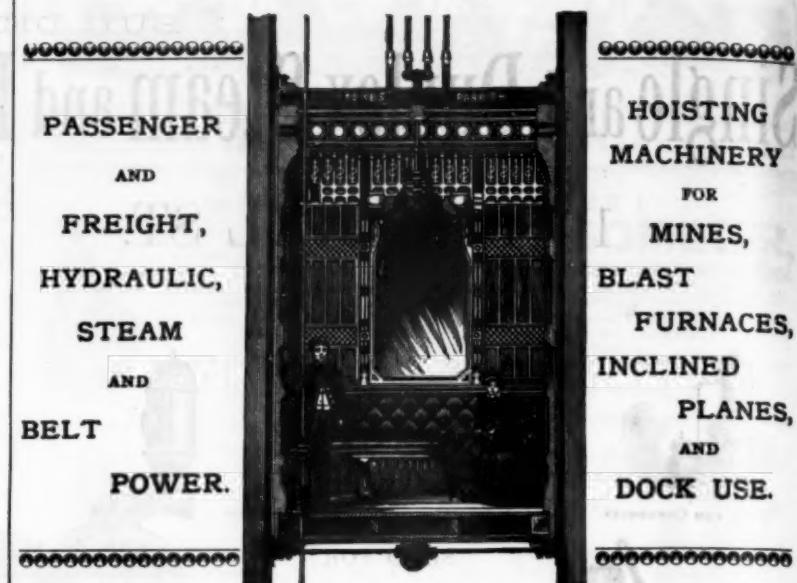
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